ABSTRACT

Title of Dissertation:	DECENT, SAFE, AND SANITARY? PUBLIC HOUSING AND THE ENVIRONMENT OF EASTERN WASHINGTON, D.C., 1940-1965
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This dissertation examines the relationships between the physical environment and the history of public housing in Washington, D.C. from the 1940s to the 1960s
The environmental features of public housing complexes, as well as those of the landscape around them, significantly shaped the outcomes of the National Capital Housing Authority's (NCHA) projects. The scale of public housing construction during that period entailed sweeping and dramatic transformations in the landscape. At the same time, the NCHA found itself constrained by material and financial pressures coming from a variety of bureaucratic and institutional sources. Those pressures limited the NCHA's ability to respond to environmental stresses at various public housing sites. In the absence of adequate responses from the NCHA, the environment played a significant role in determining the outcomes of the District of Columbia's public housing program. The physical nature of the NCHA's choice of sites, as well as the materials that it used, turned

public housing complexes into sites of environmental injustice rather than the decent, safe, and sanitary housing that the Authority envisioned.

DECENT, SAFE, AND SANITARY? PUBLIC HOUSING AND THE ENVIRONMENT OF EASTERN WASHINGTON, D.C., 1940-1965

by

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Dedication

This dissertation is dedicated to my mother, Susanne, and my father, David. Thank you for encouraging me over the past twenty-eight years.

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This project would not have been possible without the guidance, oversight, and support of Dr. Thomas Zeller. As the Chair of the Dissertation Committee, Dr. Zeller took on the crucial role of coordinating committee members' time, scheduling pre-defense meetings, and ensuring an orderly examination process, which resulted in this dissertation. Prior to the defense procedure, however, Dr. Zeller was my teacher and mentor, helping me through the research and writing process and making sure that I met my obligations in a timely fashion. Even in my moments of doubt, Dr. Zeller proved to be an eminently supportive advisor.

Dr. Freund, Dr. Friedel, Dr. Moser Jones, and Dr. Sicilia have, at various points in my graduate studies, also provided help and guidance as teachers, advisors, and mentors. Each brought a valuable perspective on the dissertation, as well as deep and thoughtful analyses based in their own fields and research. While the process of reconciling their diverse comments and suggestions was far from easy, in the end their contributions to this dissertation made it far stronger. Their commitment to this project made an invaluable difference. Furthermore, I appreciate the committee members' willingness to participate in the dissertation defense process while in the midst of the logistical difficulties posed by Covid-19.

Much credit is due to the librarians and archivists who helped me on this project. Over the course of the past several years, I undertook research at the Washingtoniana Collection, the National Archives, the special collections of the George Washington University library, the Smithsonian Anacostia Museum, and the District of Columbia Archives. The abundant knowledge and expertise of the archivists at those institutions—as well as their often kind and welcoming manner—made the dissertation research process both fruitful and amusing. I have particular gratitude for the efforts of Sarah LeClaire and Rebecca Katz at the District of Columbia Archives.

Finally, I would like to thank my sister, my brother, and my family and friends. Your emotional support helped me move through this process. Without your presence and kindness I would not have been able to complete this project. Thank you to all of those involved, and a very special thank you to Nicole.

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List of Acronyms

ADA	Alley Dwelling Authority (renamed NCHA in 1943)
FPHA	Federal Public Housing Authority (renamed PHA in 1947)
NCHA	National Capital Housing Authority
NCPC	National Capital Planning Commission
NCPPC	National Capital Park & Planning Commission (renamed NCPC in 1952)
NPS	National Park Service
PHA	Public Housing Administration
RLA	Redevelopment Land Authority
USHA	United States Housing Authority (renamed FPHA in 1942)

Introduction

"Decent, Safe, and Sanitary?" Public Housing Transforms the Metropolitan Landscape

The public housing program for Washington, D.C. altered the city's landscape in significant ways. The designers, planners, and builders of the National Capital Housing Authority (NCHA) undertook an ambitious program to build new, non-commercial dwelling units across the city during the 1940s, 1950s, and 1960s. Most of those units were built on the opposite side of the Anacostia and Potomac Rivers from the more densely populated core of the city around the National Mall, Capitol Hill, and the largely residential areas to the north. By building new units, however, the NCHA did more than just furnish new living spaces for impoverished residents of the District of Columbia. It also remade large swaths of the city. In order to construct decent, safe, and sanitary housing, the NCHA had to remake a terrain that was often rolling, rugged, run through with ravines and creeks, and moderately forested. Public housing design and construction remade the environment of eastern Washington, D.C.[1]

In order to build public housing, the NCHA had to build a new envirotechnical system in eastern Washington, D.C. that could support hundreds of families. I argue that the envirotechnical landscape that the NCHA built gave rise to significant environmental obstacles that undermined the Authority's ability to deliver on its promise of decent, safe, and sanitary housing. The reasons for that failure can be categorized in two distinct, but

[1] By eastern Washington, D.C., I mean parts of the city to the east of the Anacostia and Potomac Rivers, which were formidable geographical features separating the densely populated downtown core from other parts of the District of Columbia until the mid-twentieth century. I do not mean to confuse the political boundaries of Washington's quadrants, which divide the city into eastern and western sides at the Capital Building, with the geographical boundaries created by the Anacostia and Potomac Rivers. Much of the existing literature about the environmental history of Washington, D.C. or the history of planning in the nation's capital tends to focus on the densely populated downtown core. Literature that does address eastern Washington, D.C. is usually about the history of places within half of a mile of the banks of the Anacostia and Potomac Rivers. My dissertation broadens the environmental history of Washington, D.C. by centering the story of spaces "on the other side of the river" that historians have overlooked. For histories of what I refer to as eastern Washington, D.C., see John R. Wennersten, *Anacostia: The Death and Life of an American River* (Baltimore: The Chesapeake Book Company, 2008); Carl Abbott, *Political Terrain: Washington, D.C., from Tidewater Town to Global Metropolis* (Chapel Hill: The University of North Carolina Press, 1999); Frederick R. Gutheim, *Worthy of the Nation: The History of Planning for the National Capital* (Washington, D.C.: Smithsonian Institution Press, 1977); Brett Williams, "A River Runs Through Us," *American Anthropologist* 103, no. 2 (June, 2001): 409-431.

related, ways, which I call envirotechnical obstacles. By the 1950s and 1960s, the envirotechnical landscape of public housing featured envirotechnical obstacles that stood in the way of decent, safe, and sanitary housing. The NCHA's inability to overcome those envirotechnical obstacles meant that its program did more to entrench a regime of environmental injustice across eastern Washington, D.C. than to provide better housing conditions for the city's impoverished residents.

The first envirotechnical obstacle consisted of the sites that the NCHA selected. In the early 1940s the NCHA often built in areas that were rolling and rough, with tree-lined ravines leading down to creeks, streams, and the Anacostia and Potomac riverfronts. To support housing on a large scale, those sites would have to be substantially modified. Prior to the NCHA's interventions, the builders of the previous envirotechnical regime—predominantly black smallholders and their families—had constructed communities that conformed, in large part, to the topography of the area. Their homes were perched on hill lines, with unpaved roads running sinuously through the region. The NCHA, on the other hand, sought to build a simplified landscape, in keeping with the neat gridded streets and attached homes of Northwest Washington. The process of building the simplified landscape created new environmental constraints, which undermined the long-term stability of its housing stock. The environmental features of some of the NCHA's sites, such as uneven elevations and seasonal deluges, presented persistent problems for the NCHA and its tenants.

In the postwar period, the envirotechnical obstacles of siting took a slightly different form. One building, described below, was constructed on uneven land on a floodplain, below a seventy-foot embankment. However by the late-1950s the NCHA no longer had an abundance of open space on which to build. In part because of its efforts to remake the urban environment in the early 1940s, the NCHA had successfully extended roads and pipes into eastern Washington, D.C. Siting posed envirotechnical obstacles in the postwar period that were related to the rapid development of the region. The NCHA was limited to polluted and dangerous sites for its building program in the late-1950s. It built one complex nearly adjacent to an open-burn dump and another next to a major roadway. Siting in the postwar period posed envirotechnical obstacles related to complexes' proximity to noxious features of the urbanized landscape.

Second, the materials that the NCHA used in its complexes were stressed by external environmental factors. The materials that the NCHA used to build its complexes were pieces within a larger envirotechnical system. Despite being manufactured components, they were deeply tied to and embedded within their surroundings. The landscape of public housing was a hybridized space. It was neither wholly human nor natural, but instead a complex rearrangement of the two. Ultimately, the NCHA proved incapable of maintaining the relationship between the manufactured components of public housing complexes and their surroundings, which led to the decline of its housing stock.

The difficulty that the NCHA faced in addressing those two envirotechnical obstacles entrenched deep divides in access to environmental amenities across eastern Washington, D.C. Environmental racism exists when communities of color face a disproportionate number of environmental burdens compared to predominantly white communities. Across eastern Washington, D.C. African Americans—the primary residents of public housing since the beginning of the NCHA's work—were brought into closer proximity to air pollution, water pollution, waste, and deteriorating landscapes than white residents as a result of public housing policies.[2] Prior to the spate of public housing construction during the 1940s and 1950s black Washingtonians across the city had been exposed to more environmental burdens and nuisances than their white counterparts. Yet the NCHA's projects concentrated greater numbers of poor black residents in and around sensitive and dangerous sites. This constituted a significant envirotechnical obstacle to the success of the NCHA's program.

In Washington, public housing construction constituted an effort to bring the power of the local and federal governments to bear on the problem of poor quality

[2] The NCHA integrated its properties in 1953, one year before *Brown v. Board of Education of Topeka, Kansas*. Soon after doing so, white residents began to move to suburban communities or private housing stock elsewhere in the city. For example, at Highland Dwellings, covered extensively in this dissertation, the number of white families in the previously segregated complex declined from 350 to 108 between June of 1952 and October of 1959. The number of black families increased from zero to 226 during the same period. See: "Statement of Walter E. Washington, Executive Director, National Capital Housing Authority, Before The United States Commission on Civil Rights, April 13th, 1962"; Folder "Question as to Need for Regulations to Provide for the Nondiscriminatory Use of Housing Facilities P. 1-140, Entry P 101: Transcripts of Hearings on Nondiscriminatory Housing and Homes Improvement Regulations, RG 351, National Archives and Records Administration I (hereafter NARA I).

housing. The question of housing for reformers in the early-twentieth century went beyond the domestic living space itself, however. Proper housing included decent sanitation; proper access to clean water, ventilation, sunlight, and greenspace; as well as structurally sound dwelling units. The massive transformations that the NCHA made to the landscape of eastern Washington, D.C. were meant to support these environmental features of decent, safe, and sanitary housing. Due to the envirotechnical obstacles that the NCHA encountered during that process, however, public housing in fact came to perpetuate unjust housing conditions. After the rapid departure of working-class white residents, African Americans became the primary group to bear the burden of unjust housing conditions within the NCHA's complexes.

To make clear the role of the environment in undermining its pursuit of decent, safe, and sanitary housing, I focus on five of the NCHA's projects that were built between 1940 and 1960. Barry Farms, which was built in a historic black farming community, was planned in 1940; construction began at the site in 1941. Lincoln Heights, planned and built between 1941 and 1945, sits on top of a hilly and rugged section of northeast Washington. In the third chapter I study Highland Dwellings, which was initially intended for white families only, which was built between 1942 and 1944. The complex rapidly became majority-African American by the late-1950s. During that racial shift, the complex suffered from a number of deadly fires. The consequences of those fires were exacerbated by the NCHA's choice of materials.

After the history of Highland Dwellings, my chronology shifts to the postwar planning and building period. The NCHA went through a new spate of construction in the mid-1950s that was touched off by the start of urban renewal elsewhere in the District of Columbia. Although Congress passed the District of Columbia Redevelopment Act in 1945, the District of Columbia Redevelopment Land Agency (RLA) waited until 1952 to announce an ambitious plan to redevelop a large swath of Southwest D.C.[3] Two business owners challenged the RLA's plans to take their properties through eminent domain. In 1954, the Supreme Court ruled in *Berman v. Parker* that the RLA's could take the businesses, with just compensation, in the interest of public use. That ruling cleared the

[3] Wendell E. Pritchett, "The 'Public Menace' of Blight: Urban Renewal and the Private Uses of Eminent Domain," *Yale Law & Policy Review* 21, no. 1 (2003), 32.

way for the RLA and urban renewal programs across the country to proceed.[4] The NCHA would be brought into the RLA's plans as a partner, providing public housing for the thousands of displaced residents.

In the fourth chapter, I describe the construction of Kenilworth Courts, which began in 1957. That complex was sited very close to an open burn landfill. The final case study in this dissertation is Sheridan Terrace, where construction began in 1958. I selected these complexes because the NCHA documented their progress closely. Furthermore, the local press covered the construction process, resident move-ins, and the deterioration of the projects extensively. Both of the projects were built as the NCHA scrambled for space to house residents displaced by urban renewal. The Authority's redevelopment of eastern Washington in the early 1940s had proven fruitful. Space was increasingly limited for the types of large projects that the NCHA had pursued during the war years. Initially both the NCHA's leadership and reporters hailed all of its projects as examples of the decent, safe, and sanitary modern amenities. By the 1950s, however, the press began to publish bleak accounts of the conditions at some of the complexes. By the late-1960s, public housing in the District of Columbia had apparently failed to live up to the NCHA's promise of decent, safe, and sanitary dwellings. Eroding slopes, deteriorating materials, fire, smoke, and the loss of a child's life in a trash dump near Kenilworth Courts brought to light the envirotechincal obstacles that had emerged from the NCHA's work.

These case studies also reveal that envirotechnical obstacles lingered throughout the NCHA's early building program. In some cases, the types of changes that the NCHA made to the urban landscape amplified the effects of those environmental obstacles. Some postwar projects suffered from erosion, flooding, and a slew of other issues, much as the wartime projects had. This does not mean, however, that the NCHA's approach to public housing construction during the postwar period was the same as it had been during the early 1940s. The environmental history of public housing is complicated. The NCHA's work was shaped in part by the intersections of politics, bureaucratic struggles, the economics of the wartime and postwar eras, and racist planning policies. These factors conditioned the NCHA's ability to respond to the very active environmental

[4] Ibid., 1.

changes at its sites. Ultimately those environmental forces worked to undermine the Authority's ability to erect decent, safe, and sanitary housing. Central to my narrative, however, is the active role that the environment played in the history of public housing. Other pressures located in the realms of bureaucratic conflicts, interpersonal struggles, and finances, contoured the responses—or unresponsiveness—of the NCHA to apparent envirotechnical obstacles at its sites. Thus much of this story is told by describing the institutional history of the NCHA and its leadership. Still, as described in the following chapters, the NCHA left an indelible mark on the landscape of the District of Columbia. Many tenants lived in spaces that the Authority had engineered to support its vision of decent, safe, and sanitary housing. Many tenants, then, encountered firsthand the envirotechnical obstacles that emerged from the NCHA's interventions in and on the landscape.

The Envirotechnical Framework: Nature and Artifice Intertwined in Eastern Washington, D.C.

I use the insights of envirotechnical history to better understand the environmental history of public housing in Washington, D.C. Envirotechnical history offers a way to conceptualize the types of hybridized landscapes represented by the Rhône River, the industrialized city, or indeed the eastern portion of the District of Columbia.[5] Sara B. Pritchard's concept of the envirotechnical system informs, in part, my investigation of public housing. For Pritchard, envirotechnical systems are "inextricably embedded environments and technologies that continually reshape individual parts of the system and the whole."[6]

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[5] Sara B. Pritchard's *Confluence: The Nature of Technology and the Remaking of the Rhône* (Cambridge: Harvard University Press, 2011) challenges the notion that the Rhône River was natural up to a certain point during the 1940s, becoming unnatural only after the large capital investments made in the River during the postwar period. Pritchard and Thomas Zeller naturalize the process of industrialization in their chapter from the edited collection *The Illusory Boundary: Environment and Technology in History*. They write that "[n]aturalizing industrialization…highlights the ways in which industrial processes were embedded within, and thus dependent upon, natural resources, environmental processes, and ecosystems." See Sara Pritchard and Thomas Zeller, "The Nature of Industrialization," in *The Illusory Boundary: Environment and Technology in History*, ed. Martin Reuss and Stephen H. Cutliffe (Charlottesville and London: University of Virginia Press, 2010), 70.

[6] Pritchard, *Confluence*, 19-20. Pritchard's history of the Rhône built on the important work of Richard White, who used the concept of energy flows along the Columbia River to dissolve the boundaries between the artificial and the natural. White's account captures a broad picture of the

Pritchard's definition speaks to two core aspects of the envirotechnical system. First, Pritchard draws attention to the hybridized form of the envirotechnical system, which consists of natural and artificial components working in tandem. The system eludes categorical analysis as wholly natural or technological. The same is true for the landscapes that smallholding families in eastern Washington, D.C. built as well as the ones that the NCHA later constructed in the same places. Second, an envirotechnical system is dynamic. It is no more static than a running river like the Rhône. The NCHA proved to be incapable of responding in a significant way to the envirotechnical obstacles at its complexes; the obstacles were products of the dynamism of the envirotechnical system. As water at the complexes moved and soil shifted, and as the wind carried smoke and fire, the envirotechnical obstacles to the NCHA's goals mounted. The dynamism of an envirotechnical system emerges from the ways that different components of the system interact.[7]

The NCHA tried to rearrange the landscape of eastern Washington, D.C. to support decent, safe, and sanitary housing. How well did the NCHA's envirotechnical system help in that pursuit? In eastern Washington, D.C., the NCHA built a new envirotechnical system with parts that often worked disharmoniously. At Lincoln Heights, heavy rainfall damaged the roofing material, leading to cave-ins that were

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history of the Columbia River and its uses through the perspective of energy. See Richard White, *The Organic Machine: The Remaking of the Columbia River* (New York: Hill and Wang, 1995).

[7] In *Confluence,* Pritchard brings nature into the forefront, as an active agent of historical change, and as something that played a role in reshaping the Rhône during the postwar period. In that regard she "naturalizes" technology, showing how the development of a hydraulic system was in fact deeply intertwined with the natural features of the Rhône. The development of the river as a hydraulic system was conditioned and shaped by both the river itself and the contests between different agencies and groups to implement their vision for the river's uses. The envirotechnical system represents a hybridization of both the technological and environmental domains; the two shape each other in tandem. See: Sara B. Pritchard, *Confluence: The Nature of Technology and the Remaking of the Rhône* (Cambridge: Harvard University Press, 2011), 2-14. I use the envirotechnical framework to add to the history of development in eastern Washington, D.C. Erecting buildings, laying sewers, constructing drainage, grading slopes, and maintaining the integrity of public housing complexes was not a straightforward process whereby human actors subdued nature. In fact, it was a complex process, where various constraints on the NCHA's building program often left more room for nature to act, which in turn prompted responses (or, more often, non-responses) from the human managers of the public housing landscape. Although it was more developed by the late-1950s, and lacked the obviously "natural" features of the agricultural communities of the 1940s, eastern Washington, D.C. continued to experience environmental changes. Whether that meant erosion, flooding, or pollution, the changing environmental conditions of eastern Washington, D.C. still played important roles in the outcome of the NCHA's public housing project. The landscape of public housing was neither wholly natural nor artificial, but instead was a complex hybridization of both.

addressed with heavier coats of bitumen.[8] Water flooded and pooled in several of the complexes, and at Barry Farms seeped into old gas lines, which cut off heat to the building in the autumn of 1976.[9] At Highland Dwellings, several fires threatened the lives and property of residents; the devastating consequences of the fires were exacerbated by improper building practices.[10] Kenilworth Courts suffered due to its proximity to a landfill. Sheridan Terrace residents dealt with exhaust from automobiles as well as land subsidence and flooding. In each case study, the envirotechnical system broke down in crucial ways. Those ways can be attributed to the siting of public housing complexes, the materials used in building those projects, and the disproportionate distribution of environmental burdens that residents of public housing endured. The landscape of public housing was riven with envirotechnical obstacles.

Envirotechnical history is a useful framing for a history such as this, which describes the institutional constraints and responses of the NCHA as it worked to pursue its Progressive ideals of decent, safe, and sanitary housing. Historians such as Sara Pritchard in *Confluence* and Richard White in *The Organic Machine: The Remaking of the Columbia River*, center the role of bureaucracies and institutions in managing envirotechnical systems. Pritchard incorporates the role of bureaucracies in her description of envirotechnical regimes. The envirotechnical regime consists of "the institutions, people, ideologies, technologies, and landscapes that together define, justify, build, and maintain a particular envirotechnical system as normative."[11]

In the chapters about Barry Farms and Lincoln Heights, I describe the historical processes that led to an overthrow of one envirotechnical regime by another; namely, the NCHA's work to take control of areas formerly inhabited and worked by smallholding African American families. This is where my study can add a small piece to the literature about envirotechnical systems and envirotechnical regimes. Pritchard and White describe a co-evolutionary process in the transformations of the Rhône and Columbia Rivers,

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[8] P.W. Clogston to John Ihlder, "Roof Sheathing at Lincoln Heights," July 30th, 1945; Lincoln Heights Dwellings 1943-1945, Box 1, Entry P 23: Records Regarding Public Housing Dwellings, 1943-1959, RG 302, NARA.
[9] Richard E. Price and Juan Williams, "Water Gets in Line, Barry Farms Loses all Gas for Heating," *The Washington Post*, October 14th, 1976.
[10] Connie Feeley, "Housing Project Lacks Fire Walls," *The Washington Post*, December 14th, 1957.
[11] Pritchard, 23.

wherein bureaucracies grew along with the envirotechnical systems in those areas. The histories of Barry Farms and Lincoln Heights show both continuities and ruptures. The roles of water, soil, and trees on the properties remained much the same as they had when Barry Farms and Lincoln Heights were farming communities. But the NCHA graded and terraced the landscape, building new infrastructures that had not been there before. Those long established natural processes at the two sites interacted in complex ways with the new envirotechnical system, creating obstacles that the NCHA was hard-pressed to sufficiently address.

Locally, the NCHA overthrew the existing envirotechnical regime in eastern Washington, D.C., replacing it with the NCHA's preferred spatial and material arrangements. Prior to the NCHA's interventions, smallholding black families would often tend to some animals and gardens, but also frequently commuted across the Anacostia River for labor in the more densely developed downtown areas.[12] After the NCHA's work, however, eastern Washington, D.C. was integrated into the infrastructural networks that had been established during the late-nineteenth and early-twentieth centuries on the other side of the river. The NCHA was a public housing authority, but its goal was also to build homes that could meet middle-class standards of cleanliness, decency, and safety. This meant that the NCHA's influence extended beyond the home itself, as it coordinated with other city agencies to bring vital infrastructures to the communities it was building. The NCHA's efforts helped pave the way for increased development on the eastern side of the city. It was an agent of urban renewal, and the environmental history of urban renewal is a little-explored part of metropolitan environmental history.

The NCHA accomplished the overthrow of the previous envirotechnical regime in part through the courts' approval of eminent domain, with which the NCHA laid claim to dozens of acres throughout eastern Washington, D.C. But this history is not centrally concerned about the legal fights between local citizens and the NCHA's planners as much as it is about the ways that the environment of eastern Washington shaped the outcome of the NCHA's plans. The NCHA removed trees, tried to terrace the rolling terrain, rerouted and covered rivers and streams, and laid out large grassy fields to

[12] Williams, 415.

support middle-class standards of domesticity. Materially, the NCHA connected its complexes to the infrastructures that already ran throughout western Washington, D.C.; it built new sewers to eliminate the outdoor privy, new pipes to replace the community pumps and wells, and new roads for commuters to move between the complexes and their workplaces. But these transformations also created new envirotechnical obstacles, which residents of public housing complexes faced with dwindling support from the NCHA beginning in the 1960s and 1970s.

Remaking the City in Their Image: The Environmental Legacy of Urban Renewal

Metropolitan environmental history has yet to dedicate much space to the history of urban renewal. I contend that the spate of urban redevelopment that took place following the Second World War dramatically remade the urban environment, and in turn the environment shaped the outcomes of the efforts of the NCHA, which was one agency involved in urban renewal. Old neighborhoods with substandard housing were demolished to make way for new office complexes, middle-class neighborhoods, and public housing developments. Thousands of residents in the densely populated urban center were displaced by these changes, and the NCHA desperately sought land on which to build and house the displaced. Many white residents whose neighborhoods were demolished in the course of urban renewal fled to the suburbs, while public housing accommodated many black families. The racial and demographic movements that urban renewal accelerated led to both suburbanization and the concentration of poverty in public housing sites. There was an environmental side to this story, as white residents left substandard housing in the urban core and many black families moved into public housing that was often near environmental nuisances or quickly deteriorated during the 1950s and 1960s. Urban renewal entrenched deep environmental as well as racial divides in postwar cities.

The vast majority of the literature in metropolitan environmental history focuses on the dramatic transformations in the urban landscape that industrialization engendered. This makes sense, as during the mid- to late-nineteenth centuries, industrialization transformed cities from compact, walkable places into much larger and more densely

populated metropolises.[13] The environmental changes taking place in US cities during that period were tied to other changes in demographics, politics, and the metropolitan economy.[14]

While there have been many high-quality histories of cities that focus predominantly on metropolitan environmental changes in the twentieth century, there are few that describe the history of the mid-twentieth century urban environment specifically.[15] Those that do tend to emphasize the history of suburban

[13] Joel Tarr provides a succinct history of the stages of transformation and growth that American cities experienced during the nineteenth and twentieth centuries in *The Illusory Boundary*. See Joel Tarr, "The City as an Artifact of Technology and the Environment," in *The Illusory Boundary: Environment and Technology in History*, eds. Martin Reuss and Stephen H. Cutcliffe (Charlottesville: University of Virginia Press, 2010): 145-170.

[14] There have been, generally, three major ways that metropolitan environmental historians have approached the environmental history of cities during the nineteenth and early twentieth centuries. The first is by studying the history of engineering and infrastructures. The expansion of infrastructures during those two centuries was driven by increasing pollution, as well as population stresses on the resources available in the immediate surroundings of a city. The expansion of those infrastructures created deep links between cities and their hinterlands, and the two exerted transformational pressure on each other. Examples include: William Cronon, *Nature's Metropolis: Chicago and the Great West* (New York and London: W.W. Norton and Company, 1991); Joel Tarr, *The Search for the Ultimate Sink: Urban Pollution in Historical Perspective* (Akron: University of Akron Press, 1996); Martin Melosi, *Garbage in the Cities: Refuse, Reform, and the Environment* (Pittsburgh: University of Pittsburgh Press, 2005); Martin Melosi, *The Sanitary City: Environmental Service in America from Colonial Times to the Present* (Pittsburgh: University of Pittsburgh Press, 2008); David Soll, *Empire of Water: An Environmental and Political History of the New York City Water Supply* (Ithaca: Cornell University Press, 2013); Carl Smith, *City Water, City Life: Water and the Infrastructure of Ideas in Urbanizing Philadelphia, Boston, and Chicago* (Chicago: University of Chicago Press, 2013). The second way of studying industrial-era metropolitan environmental history is through the lens of the new environmental politics that changing cityscapes produced during that period. See, for example: David Stradling, *Smokestacks and Progressives: Environmentalists, Engineers, and Air Quality in America* (Baltimore and London: The Johns Hopkins University Press, 1999); Matthew Klingle, *Emerald City: An Environmental History of Seattle* (New Haven and London: Yale University Press, 2007). The final way that metropolitan environmental historians have approached their subject is through the lens of environmental justice. See: Harold Platt, *Shock Cities: The Transformation and Reform of Manchester and Chicago* (Chicago: University of Chicago Press, 2005); Matthew Gandy, *Concrete and Clay: Reworking Nature in New York City* (Cambridge: MIT Press, 2002); Dawn Day Biehler, *Pests in the City: Flies, Bedbugs, Cockroaches, and Rats* (Seattle and London: University of Washington Press, 2013); Andrew Hurley, *Environmental Inequalities: Class, Race, and Industrial Pollution in Gary, Indiana* (Chapel Hill: The University of North Carolina Press, 1995).

[15] Exceptions to this include Andrew Hurley, *Environmental Inequalities: Class, Race, and Industrial Pollution in Gary, Indiana, 1945-1985* (Chapel Hill: University of North Carolina Press, 1995); Sylvia Hood Washington, *Packing Them In: An Archaeology of Environmental Racism in Chicago, 1865-1954* (Lanham, MD: Lexington Books, 2004); selected pieces from Jefferson Cowie and Joseph Heathcott, eds., *Beyond the Ruins: The Meanings of Deindustrialization* (Ithaca, NY: Cornell University Press, 2003).

environmentalism.[16] Adam Rome, for example, wrote about the interrelated histories of suburbanization, suburban environmental change, and a nascent environmental movement in *The Bulldozer in the Countryside: Suburban Sprawl and the Rise of American Environmentalism*. He contended that the use of mass production techniques on environmentally sensitive sites in the suburban United States during the 1950s sparked the environmental movement of the 1960s.[17] As he put it,

> [t]he adoption of mass production techniques greatly intensified the environmental impact of homebuilding. For the first time, builders put hundreds of thousands of homes in environmentally sensitive areas, including wetlands, steep hillsides, and floodplains. Builders also began to use new earth-moving equipment to level hills, fill creeks, and clear vegetation from vast tracts. The result was more frequent flooding, costly soil erosion, and drastic changes in wildlife populations.[18]

The histories of Barry Farms, Lincoln Heights, Highland Dwellings, Sheridan Terrace, and Kenilworth Courts reveal that the scale of planning for public housing in the District of Columbia, as well as the environmental aftereffects for residents, were not dissimilar from private construction efforts taking place in Montgomery County, Prince George's County, or Northern Virginia. But public housing, as opposed to the construction taking place over the District of Columbia line, was meant to be a non-commercial alternative to the private housing and rental markets. Like private developers, public housing planners built hundreds of homes during the second half of the 1940s and 1950s. Unlike private developers, they were not interested in building cheap tract housing that could be put on the market quickly. The NCHA put care into the design and aesthetic appeal of their complexes, even if other political and economic factors undermined the construction

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[16] See, for example, Christopher Sellers, *Crabgrass Crucible: Suburban Nature and the Rise of Environmentalism in Twentieth-Century America* (Chapel Hill: The University of North Carolina Press, 2012). Although delving into a far deeper history than that of suburbia, in *Car Country: An Environmental History*, Christopher Wells describes the deep political and social histories of the automobile, which ultimately led to the mass suburbanization of the post-World War Two period. See Christopher Wells, *Car Country: An Environmental History* (Seattle and London: University of Washington Press, 2012).

[17] Adam Rome, *The Bulldozer in the Countryside: Suburban Sprawl and the Rise of American Environmentalism* (Cambridge: Cambridge University Press, 2001).

[18] Ibid., 3.

process. Progressive reformers within the NCHA wanted to provide housing that mimicked the standards of middle-class dwellings elsewhere in the city. In doing so, they selected sites that had to be extensively graded and terraced, were relegated to using substandard materials during the Second World War, and also retrenched environmental inequalities into the landscape. Furthermore, my perspective is a bit different than Rome's portrayal of the environmental consequences of suburban development. Deploying the envirotechnical framework, I am more interested in how the home and its materials were situated within a larger envirotechnical system, and the complex ways that the physical materials within public housing interacted with their surroundings. My use of the two categories of environmental obstacles centers the environmental issues that NCHA planners dealt with, while describing the ways in which those planners were politically and economically constrained in different ways during the mid-twentieth century.

The NCHA's program involved remaking large swaths of the city in relatively short periods of time. The Authority did its best to grade and terrace parts of eastern Washington, D.C., but in doing so also laid the groundwork for future environmental obstacles at its public housing sites. Just a cursory description of the NCHA's work demonstrates the degree of change that the Authority would bring to the region. For one thing, it had to cut down many of the trees that once flourished on and in the proximity of its sites. The region had gone through one spate of deforestation during the Civil War, during which land erosion increased dramatically, filling the Anacostia with silt.[19] During the 1940s, however, cutting down trees was less a matter of defending the District of Columbia against rebellious armies, and had more to do with Ihlder's desire for complexes with a good deal of open greenspace. In other words, the visions that public housing planners had for decent, safe, and sanitary housing required tree removal on a moderate scale. Furthermore, extant gullies, streams, creeks, and ravines needed to be filled as the NCHA leveled and terraced the property. Another substantial part of the construction of a new envirotechnical system at the NCHA's sites involved stringing wires, laying asphalt, and burying pipes, which further altered the complexes and the areas around them. In certain circumstances, the envirotechnical system broke down

[19] Williams, 415.

when the natural and manufactured components of it interacted poorly. Because of the size of these complexes, the vulnerability of their residents, and the various economic and political pressures on the NCHA, any break down of the envirotechnical system could prove devastating to the Authority's goal of providing decent, safe, and sanitary housing.

While the environmental history of industrialization and suburbanization left indelible marks on the metropolitan landscape, the environmental legacy of urban renewal has received far less attention by scholars. Like the post-industrial reforms of the late-nineteenth and early-twentieth centuries, urban renewal was prompted in part by planners', engineers', and reformers' concerns about a deteriorating urban environment. Through the demolition of problem neighborhoods and the construction of public housing, citizens of mid-twentieth century cities across the country hoped to remediate and rehabilitate the cityscape. They introduced and executed plans to do so on a massive scale. Urban renewal was not a surgical intervention into dilapidated communities; it was like a meat ax hacking through swaths of the city.[20] In the District of Columbia, the Southwest Urban Renewal Area (SURA) alone constituted 560 acres, nearly all of which was demolished and rebuilt between 1952 and 1970.[21] The National Capital Housing Authority redeveloped about 100 acres across eastern Washington, D.C. Public housing, which went hand-in-hand with urban renewal in the 1950s and 1960s. The environmental legacy of public housing—which was an accessory to urban renewal—merits a place in the literature on metropolitan environmental history.

Public Housing and Environmental History: The Envirotechnical Landscape as an Active Agent in Public Housing Outcomes

Historians have asked questions about siting, the material elements of public housing, and the racialization of space in the metropolitan landscape in the literature about public housing. Yet, due to the nature of the discipline, public housing historians usually answer those questions by investigating the sociopolitical milieu of public

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[20] See, for example, Robert Moses's well-known comments about building highways in New York City. In *The Power Broker: Robert Moses and the Fall of New York*, Robert Caro quotes Moses as once saying "when you operate in an overbuilt metropolis, you have to hack your way with a meat ax." See Robert Caro, *The Power Broker: Robert Moses and the Fall of New York* (New York: Alfred A. Knopf, 1974), 849.

[21] Francesca Russello Ammon, "Commemoration Amid Criticism: The Mixed Legacy of Urban Renewal in Southwest Washington, D.C.," *Journal of Planning History* 8, no. 3 (August, 2009), 185.

housing Authorities during the mid-twentieth century. Often, public housing historians answer questions about siting, the materials used in public housing, and racial injustice by studying the interactions between local, state, and federal governments, or by looking at racial and demographic changes at the level of the neighborhood or block, for example. By doing so, they have created useful and engaging narratives that help answer the question of what went wrong with public housing in the United States. The envirotechnical approach, however, foregrounds the environment as something that—in tandem with race, politics, and economics—physically shaped the outcome of the District of Columbia's public housing initiative.

Historians of public housing specifically, and urban renewal more generally, frequently discuss the matter of siting public housing. The process of siting was riven with political and racial tensions, and there is a good deal of agreement that in the outcome of struggles between genuine reformers, like Chicago's Elizabeth Woods, and conservative or reactionary politicians and citizens who were wedded to the status quo, the latter came out as the victors. Arnold Hirsch refers to public housing siting as a means to build "the second ghetto," in which impoverished black residents were concentrated in sites of extreme poverty. Public housing therefore became a means to shore up the racial boundaries between blacks and whites within metropolitan spaces. He writes that this second ghetto was "[b]orn of the struggles between planners and politicians, racists and liberals, ethnics and institutions… none could have done it alone."[22] Those struggles "gave old enclaves a permanence never seen before."[23]

As one of the earlier historical treatments of the question of siting in public housing Hirsch's assessment has come under a great deal of scrutiny. Some historians, like N.D.B. Connolly, have agreed with Hirsch's assessment of the political and social vulnerabilities of the public housing siting process, though places the blame for the eventual failure of public housing on other factors. His book *A World More Concrete: Real Estate and the Remaking of Jim Crow South Florida* asks who won and who lost in the process of urban renewal, finding that the racial boundaries of south Florida were shored up in large part because of the privileged position of predominantly (though not

[22] Arnold R. Hirsch, *Making the Second Ghetto: Race and Housing in Chicago, 1940-1960* (Cambridge: Cambridge University Press, 1983), 258.
[23] Ibid., 275.

solely) white middle- and upper-class residents. Connolly moves the focus of his narrative away from politics, however, and towards the market system as the prime force undermining reform efforts.[24]

Overwhelmingly, however, when writing about siting, public housing historians are writing about the economic, political, and social dimensions of siting, which, while important, are enhanced by close examination of the physical qualities of the landscape. There are a few exceptions in the literature, but they are brief. In his study of the Boston Housing Authority, Lawrence Vale writes that "[m]any areas failed to be developed or redeveloped as public housing for a variety of reasons. Some fell short on technical grounds, found to require excessive fill or extensive use of pilings. In other cases, technical reasons seem to have been excuses to withdraw from an area seen by competing real estate interests as likely to attract private development."[25] Writing about Pruitt-Igoe in St. Louis, Joseph Heathcott writes that although beliefs about housing reform stretching back to the nineteenth century and continuing into the New Deal planning era, "suggested a direct causal relationship between the human environment and the behavior of humans within that environment[,]" ultimately that policy direction was interrupted by the housing crunch during and after the Second World War, and the turn to high-rises to meet that need.[26] Pressures from political and economic stakeholders at the top and reactionary white residents on the bottom shaped the site selection process for public housing. Most historians of public housing acknowledge that these factors mattered, to different degrees.

But my study of siting moves in a different direction. The site itself—and the transformations that the NCHA made on that site to support housing—was not simply a passive backdrop but an active agent of historical change. At key points the envirotechnical system of Washington's public housing program broke down. The NCHA's ability and capacity to respond to the envirotechnical obstacle of siting was contoured by the different political, economic, and bureaucratic circumstances during the

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[24] See N.D.B. Connolly, *A World More Concrete: Real Estate and the Remaking of Jim Crow South Florida* (Chicago: The University of Chicago Press, 2014).
[25] Lawrence J. Vale, *From the Puritans to the Projects: Public Housing and Public Neighbors* (Cambridge: Harvard University Press, 2000), 254.
[26] Joseph Heathcott, *The City Remade: Public Housing and the Urban Landscape in St. Louis, 1900-1960*, Ph.D. diss., Indiana University, August, 2002, 431.

1940s, 1950s, and 1960s. By tying the environmental qualities of the sites that the NCHA selected for public housing to the NCHA's relationship with other federal and local bureaucracies, I believe that it is possible to provide a novel perspective on the reasons why public housing did not succeed.

Some historians, such as D. Bradford Hunt, have concluded that public housing was a "blueprint for disaster." He argued that

> [a]t its core, public housing, as conceived by reformers in 1937 was a blueprint for disaster and could not have survived the postwar housing boom without fundamental changes. The need for these changes was actually recognized early on, but they were never seriously pursued. The crime was therefore not the effort to better house the poor but the failure by those in power to alter course and to fix evident mistakes.[27]

To put that statement into an envirotechnical context, the Authority's leadership was consistently made aware of the obstacles that the builders and eventual residents of public housing faced. Contractors wrote to the NCHA board—and its chief executive John Ihlder specifically—about erosion, flooding, and heavy rainfall at the Barry Farms and Lincoln Heights sites. The Authority did little to rectify the problem of frequent fires at the Highland Dwellings complex. Later, in the 1950s, a soil mechanics engineer found evidence of slippage during construction at Sheridan Terrace. Smoke emanated from a major landfill and large roadway toward the residents of Kenilworth Courts and Sheridan Terrace. It might have been possible for the NCHA to successfully confront those environmental forces, but it was consistently constrained by other agencies throughout the 1940s, 1950s, and 1960s, and by its financial situation in the postwar period, as detailed below. Without the support, time, and funding necessary to confront the pressing envirotechnical obstacles at its sites, the NCHA was unable to fulfill its goal for housing.

Those obstacles were more than simple nuisances. They undermined the NCHA's ability to construct decent, safe, and sanitary structures. As plaster corroded and units flooded, residents dealt with vermin, unsafe greenspace, exhaust, smoke, and dust. The envirotechnical obstacles at the NCHA's sites made public housing dwellings often

[27] D. Bradford Hunt, *Blueprint for Disaster: The Unraveling of Chicago Public Housing* (Chicago: University of Chicago Press, 2009), 13.

unpleasant and sometimes dangerous places to live. By focusing on the envirotechnical obstacles of siting, materials, and injustice, and centering the environment as an active agent of historical change at the NCHA's properties, it is possible to foreground the role of the environment, and the NCHA's struggles—and failures—to create livable and viable homes for the most vulnerable residents of the District of Columbia.

Not all historians of public housing accept Hunt's argument.[28] The first decade of the twentieth century produced valuable scholarship on the social history of public housing. Those historians successfully challenged the notion that public housing was a complete failure and that housing authorities simply locked desperate residents into three generations of poverty and despair. Sudhir Alladi Venkatesh, for example, focuses on the idea of community in *American Project: The Rise and Fall of a Modern Ghetto*. He demonstrates that amidst the poor conditions of the Robert Taylor homes in Chicago, residents successfully defined their own idea of what it meant to live in a community. Despite the decay around them, that community offered vital support for residents who struggled to participate in the postwar American pursuit of prosperity. African Americans rooted themselves in the national citizenry through the pursuit of community in the Robert Taylor Homes, showing that the suburban domestic ideal was not a prerequisite for the development of a resilient urban neighborhood.[29]

Nicholas Dagen Bloom also revised the traditional narrative about the rapid decline of public housing into an abysmal state with *Public Housing that Worked: New York in the Twentieth Century*. While acknowledging that public housing was in large part failed to successfully meet its goals in cities across the United States, Bloom portrays the New York City Housing Authority (NYCHA) as an exception, due to its management practices, which "broadly defined, are the most important factors in the long-term shape

[28] Most prominent among those voices of disagreement would be Lawrence J. Vale, who states in *Purging the Poorest: Public Housing and the Design Politics of Twice-Cleared Communities* that in fact public housing consisted of many different programs with different degrees of success, and furthermore that the concentration of poverty in public housing was actually an historical aberration that emerged in the 1960s-1980s. See Lawrence J. Vale, *Purging the Poorest: Public Housing and the Design Politics of Twice-Cleared Communities* (Chicago: University of Chicago Press, 2013), 3-6.
[29] Sudhir Alladi Venkatesh, *American Project: The Rise and Fall of an American Ghetto* (Cambridge: Harvard University Press, 2000).

of public housing communities."[30] Bloom blames patronage systems, poor selection and training, and a range of other reasons for the relative decline of other public housing programs across the country.

Both Bloom and Venkatesh offer important insights into the nature of the local community within public housing complexes. Their histories focus on the lived experiences of residents and how they strove for better living conditions—socially and materially—in the midst of decay. They also write about life in the high-rises and superblocks that characterized post-war housing planning across the United States. Washington, D.C. is different, however. The height limitations that were historically adopted to preserve the appearance of the city did not permit the construction of high-rises or superblocks.[31] Except for Sheridan Terrace, the complexes that followed were all built across sprawling grounds, but consisted of dozens of two-story attached homes. Managers in Washington, D.C. did not have to contend with broken elevators or stairwells, the concentration of thousands of people in single buildings, or the other problems of high-rise public housing. Rather, the managers in the District of Columbia dealt with eroding slopes, flooding in and around its buildings, fires, smoke, soot, and ash. Height restrictions in the District of Columbia ensured that it would not contain high-rise complexes on the same scale as other cities.[32]

In *The Politics of Public Housing: Women's Struggles Against Inequality*, Rhonda Y. Williams provides a striking oral history of Baltimore's experiment with high-rise public housing complexes. She reveals that public housing was not an entirely failed program by focusing on the lives and activism of black women in the projects. Black women found in public housing opportunities for political education and activism, as well as a change to move out of tenuous or dangerous living situations in private housing.[33]

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[30] Nicholas Dagen Bloom, *Public Housing that Worked: New York in the Twentieth Century* (Philadelphia: University of Pennsylvania Press, 2009), 2.

[31] Sheridan Terrace was the closest approximation to the high-rise in other cities, but it had only seven stories.

[32] Washington's public housing program was not completely different, however. Other major cities also erected sprawling complexes consisting of townhouses or attached dwellings during the 1940s and 1950s. The "Cabrini" in Cabrini-Green, for example, referred to the two-story town homes that were built there in the early 1940s. See Vale, *Purging the Poorest*, chapter four.

[33] Rhonda Y. Williams, *The Politics of Public Housing: Women's Struggles Against Inequality* (New York: Oxford University Press, 2004), 5.

As Williams demonstrates, the New Deal was a moment when citizens could press claims on the federal government. Although their opportunities were highly circumscribed by the racism inherent in the distribution of benefits within New Deal programs, Williams shows that black women did indeed successfully press their claims. However, the relationship between the federal state and the residents of public housing was a mixed bag. While the New Deal and Great Society programs clearly sparked the political education and engagement of public housing tenants, the state became the "landlord, paternalistic authority, guarantor of decency, and provider of rights."[34] Thus black women in public housing consistently had to fight for the rights of their communities to self-development against a paternalistic federal state and reactionary opponents to federal support for impoverished urbanites.

Williams describes both the successes of black women's political education and engagement in public housing complexes as well as the limitations that they faced. But the extent to which residents of public housing in Washington, D.C. could press their claims against the NCHA was complicated by two factors. First, because the District of Columbia had nothing resembling a city government until the 1970s, there were few agencies that exercised direct authority over the NCHA, and no politicians who represented local constituencies to hold the Authority accountable for inaction in the face of envirotechnical obstacles. Second, the NCHA did not first develop as a housing authority. As demonstrated below, John Ihlder had to fight for that power. Rather, the NCHA was at first dedicated to clearing slums from the urban core. Ihlder himself came to direct the NCHA as a capstone to his long career in Progressive housing reform efforts. He helmed the NCHA until 1952, and his paternalistic conception of housing reform and public housing construction guided his work throughout that time. As demonstrated below, residents often had to appeal directly to Congress to rectify the environmental problems that they faced.

The social histories above are three examples of the value that the experiences of public housing residents add to the literature. By centering the environment of public housing, I hope to provide another dimension to the history of life on the ground in the NCHA's complexes. The environment in and around public housing complexes set the

[34] Ibid., 6.

context in which residents formed communities.[35] It also produced visible and tangible features around which residents could organize and test the strength of their power against that of the local housing authority. By the 1960s, residents were able to directly confront the NCHA executive director about conditions in their homes. In that way, the environment played an active role in the political education of public housing tenants and showed the limitations of the NCHA's power.

But the main focus of this dissertation is on the planners and administrators of the NCHA. I am interested in the ways in which the environment undermined the NCHA's pursuit of decent, safe, and sanitary housing. While I draw on the experiences of residents to corroborate the apparent physical deterioration of public housing, ultimately I am interested in the factors that gave the environment such a significant role in altering the course of Washington's public housing program from that envisioned by the NCHA's leadership. While the social historians of public housing mentioned above show that public housing was far from a complete failure, the early planners of public housing reached a different conclusion. The environment posed particular challenges, which made success—the construction of decent, safe, and sanitary housing—elusive.

The question of how successfully the NCHA dealt with envirotechnical obstacles at its sites over time can be answered in a comparison of pre-war units with those built during and after the conflict. There has been one extensive study of a public housing complex in the District of Columbia. In her PhD dissertation for the University of Maryland-College Park, Kelly Anne Quinn wrote about the Langston Terrace Dwellings, built in Northeast Washington for black families. She points to Langston Terrace as an early success for the Alley Dwelling Authority. Built in 1938, Langston Terrace was designed by black professionals for the increasing number of black families migrating to the District of Columbia during that period.[36] Quinn's main focus was on the social influences of the built environment and community formation at Langston Terrace. Like most public housing histories, the environmental dimension is secondary to other ways of understanding history. She does briefly touch on the question of siting in an envirotechnical context when she writes that "[i]n form and site strategy, Robinson's plan

[35] By "environment" I mean the envirotechnical landscape, not the social community.
[36] Kelly Anne Quinn, *Making Modern Homes: A History of Langston Terrace Dwellings, A New Deal Public Housing Program in Washington, D.C.*, Ph.d. Diss., University of Maryland-College Park, 1.

for Langston responded to the natural topography and physical context of the 13 acre parcel in Northeast."[37] According to Quinn, architect Hilyard Robinson relied on the naturally sloping topography of the site to provide vistas overlooking the Anacostia River to the east.[38]

Quinn portrays Langston Terrace as a success. It provided a model of how public housing could work in harmony with the envirotechnical obstacles of a given site (in this case, uneven grades). But by the Second World War, the political and economic realities that the NCHA faced were different than they had been during the New Deal period. While trying to continue with the older design forms—like Langston Terrace—that were celebrated in western Washington, D.C., the NCHA also faced pressure from the federal government to build quickly and a dearth of quality construction materials. This resulted in a proliferation of envirotechnical obstacles that largely pertained to siting, materials, and environmental injustice, as explored in later chapters. My dissertation builds on Quinn's by extending the history of public housing into the 1940s and 1950s. This adds a significant environmental component to the history of public housing in the District of Columbia, as the NCHA embarked on ambitious, large-scale projects east of the river that had not theretofore been attempted. Furthermore, the NCHA grappled with distinctive envirotechnical obstacles at the same moment that external political and economic pressures affected the physical construction process. In light of Quinn's dissertation, my work demonstrates that although the ADA might have had some early successes, the dramatically different circumstances of the 1940s and 1950s gave the environment an active role in undermining the quality of the Authority's housing stock.

Environmental Justice: The NCHA as a Contributor to the Unequal Distribution of Environmental Burdens

Like most American cities, Washington exhibited patterns of racial segregation that overlapped with the distribution of environmental burdens. Prior to the National Capital Housing Authority's efforts, poor people of color had lived scattered throughout the residential and commercial core of Washington. In the 1920s, the decade before the NCHA started its work, there were three large black enclaves surrounding the downtown

[37] Ibid., 123.
[38] Ibid., 128-129.

core: Southwest, Foggy Bottom, and along North Capital Street and Florida Avenue.[39] In the same decade in parts of the District of Columbia to the east of the rivers, more prosperous families—though by no means wealthy or self-sufficient—held property that had been allocated through the Freedmen's Bureau. As noted above, the land that they farmed was often marginal, and those families often still had to commute into the city for work. Further north, near the eventual location of Kenilworth Courts, white families generally owned homes in the highlands, which were far from the marshy banks of the Anacostia River. African Americans were relegated to spaces lining the river or quite close to it, which were prone to flooding and the nuisances and dangers of mosquitoes.[40]

Since the 1990s, historians and geographers have done much to explain why maps of environmental burdens project neatly onto patterns of racial segregation in metropolitan spaces. Their work has revealed that in the United States, a patchwork of regulations, municipal codes, and reactionary citizen organizing maintained longstanding racial and environmental boundaries. As geographer Laura Pulido points out, the value of black land can only be considered in relation to white land, which is seen as more valuable within a system that privileges white people. Hence, environmental racism need not be tied to specific acts, but is manifested in the subtle ways that white privilege inflates the value of white lands.[41] Since they are less valuable pieces of land, dumps, landfills, scrapyards, and other odious features of the metropolitan landscape that require large spaces can generally be found closer to communities of color rather than white neighborhoods. Environmental racism, therefore, is not a specific and discrete action, but rather informs the distribution of environmental burdens in poor communities of color rather than in white communities across the metropolitan region. This was the case for eastern Washington, D.C., where white residents expressed animosity towards nearby blacks and prevented their free movement through the region. Whites occupied the more valuable tracts of land in the higher elevations while limiting black property owners to

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[39] James Borchert, *Alley Life in Washington: Family, Community, Religion, and Folklife in the City, 1850-1970* (Urbana and Chicago: University of Illinois Press, 1980), 13.
[40] Joe Lapp, *Kenilworth: A DC Neighborhood by the Anacostia River* (Washington, DC: Humanities Council of Washington, DC, 2006), 11; Kenilworth—Neighborhood Studies, Vertical Files, Washingtoniana Collection, District of Columbia Public Library (hereafter DCPL).
[41] See Laura Pulido, "Rethinking Environmental Racism: White Privilege and Urban Development in Southern California," *Annals of the Association of American Geographers* 90, no. 1 (March, 2000): 12-40.

less valuable and potentially unhealthy spaces in the marshes and floodplains closer to the riverbanks. Kenilworth and Barry Farms were two such spaces.

Historian Sylvia Hood Washington shows that the deep roots of racism in the laws, policies, and customs of the United States have informed not just the market value of black lands and white lands, but also where certain people could live, play, and work in metropolitan spaces since the country's founding. Especially after industrialization, environmental burdens followed the customary segregation of American cities; whites would not tolerate such nuisances, and paths of resistance for people of color proved ineffective in the face of white privilege in the United States.[42] Eventually, Hood contends, the white civic body justified the segregation and exclusion of nonwhites from society by claiming that they were, unclean or impure. In turn, then, nonwhite communities—isolated and ostracized from the civic body because of fears of alien uncleanliness—were picked by the white civic body to take on the polluted, noxious, and toxic industries and places because of their association with disease.[43] The circular logic of disease and race played a significant role in shaping the development of the modern American city.

This sort of reasoning—that there was some connection between impure people (usually nonwhite residents) and unclean neighborhoods was commonplace during the Progressive period. This matters because Progressive Era ideas about the cleanliness of certain spaces informed the ways that the public housing program developed in Washington D.C. As demonstrated in the following chapter, the NCHA's early efforts to remediate the unclean and unsanitary alleys of Washington were guided by Progressive ideas about race and cleanliness. As the NCHA received an expanded mandate to build public housing in 1938, it carried that ideology into its efforts. While new public housing complexes were indeed improvements over the alley dwellings, they also segregated mostly nonwhite residents far away and out of sight of the neighborhoods west of the

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[42] Sylvia Hood Washington, *Packing Them In: An Archaeology of Environmental Racism in Chicago, 1865-1954* (Lanham, MD: Lexington Books, 2005), 1-2.

[43] Ibid., 3. Foucault's use of the history of leprosy in the Middle Ages, and the structures that persisted into the modern period to categorize and separate, inform much of Hood's analysis in *Packing Them In*. It is a convincing theoretical framework that guides a comprehensive analytical study of environmental racism in Chicago, which can be extended to most industrialized cities in the United States.

rivers. Hence, patterns of segregation and environmental racism that had existed in the downtown core of the District of Columbia prior to the Second World War were repeated on much grander scales after the conflict, as thousands of African Americans were moved into isolated and segregated complexes, some of which were cut off from the rest of the city by large, multi-lane highways and parkways. Furthermore, many of those complexes were located in environmentally sensitive areas, which placed a special burden on public housing tenants. During the 1940s and 1950s, the NCHA did not simply segregate Washington along racial lines, but also along environmental lines. When the mostly black residents of public housing were not dealing with the envirotechnical obstacles of the sites they lived on, they had to contend in some cases with smoke, fumes, ash, soot, and automobile emissions.

The placement of public housing, and its position near noxious or noisome infrastructures, speaks to the longstanding pattern of racial segregation in the American metropolis and the ways that environmental burdens map closely onto black communities. Although the NCHA may have hoped to use the open spaces across the rivers to improve the surroundings, and therefore the health of African Americans, in fact those communities were turned into dumpsites for the city's environmental burdens. Kenilworth Courts was situated nearly adjacent to a large open-burn landfill. In addition, like Barry Farms and Sheridan Terrace, Kenilworth Courts was hemmed in by major roadways, which separated the complex from the rest of the neighborhood. The proximity of some of the complexes in eastern Washington to polluted sites rendered them blighted and dirty, despite the NCHA's stated goals.

Carl Zimring adds historical as well as geographical breadth to the history of environmental racism in metropolitan spaces in his monograph *Clean and White: A History of Environmental Racism in the United States*. Zimring demonstrates that changing social perspectives among white Americans that saw foreigners, aliens, and nonwhite people as polluting the civic body correlated to similar ideas about the role of industrialization in polluting city spaces. For example, during the Progressive Era, new racial sciences categorized races in terms of health and purity. This analysis fell into general usage, and whites—who held the bulk of political and economic power across the United States—began to see themselves as cleaner, which was always defined in relation

to other unclean groups. Restrictions on homeownership and neighborhood occupancy reinforced both segregation and beliefs about the inherent cleanliness of whites. Occupations too became structured around these racial conceptions, as Asians, African Americans, and certain European immigrants were restricted to dirty jobs.[44] These policies influenced the ways that metropolitan space was organized into the 1960s and 1970s. As Zimring puts it, "[r]acial residential segregation intensified in the twentieth century, and waste handling and disposal businesses clustered in non-white residential areas."[45]

Taken together, Washington and Zimring reveal how the circular logic of Progressive Era racial science worked to limit nonwhites to dirty and polluted sections of the metropolis, vis-à-vis white residents. Of course, there were paths of resistance that nonwhites could pursue, but, often, overarching economic or political circumstances rendered those efforts either futile or far less effective than those of white residents. For example, in Gary, Indiana, a cross-class and cross-racial coalition elected Richard Hatcher mayor in 1967. He became a spokesperson for the nascent environmental movement, choosing not to chide white voters for an environmentalism that ignored the environmental issues plaguing impoverished black voters, including "poor sanitation, crowded housing, and vermin."[46] Yet industry struck back against the mayor's environmental agenda, exploiting divisions in Gary's social fabric to convince the working and middle classes that environmental legislation could come at the cost of steady employment. After serving for nearly two decades as mayor Hatcher was unseated by a candidate who promised a friendlier relationship with U.S. Steel (later the USX Corporation), the top employer in Gary.[47] This resulted in the retrenchment of racial and spatial divisions in the city, which ultimately maintained the unequal distribution of environmental burdens in black neighborhoods rather than white ones. While tactics of political resistance worked for a time in Gary, they were unable to forge a more equitable

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[44] Carl Zimring, *Clean and White: A History of Environmental Racism in the United States* (New York: NYU Press, 2015), 4-5.
[45] Ibid., 5.
[46] Andrew Hurley, *Environmental Inequalities: Class, Race, and Pollution in Gary, Indiana, 1945-1980* (Chapel Hill: The University of North Carolina Press, 1995), 111.
[47] Ibid., 177.

environment for African Americans as corporate pressure consistently bore down on any environmental legislation.

Washington offers more examples of resistance in *Packing Them In*, including the efforts of the Chicago Urban League to recruit 163 city blocks and five public housing projects in a metropolitan conservation program.[48] Yet the reader is left considering the immense difficulties that nonwhite residents faced in trying to address the structural, citywide, environmental racism that for decades had dictated which races lived where and what environmental features would be located in those neighborhoods. Considering the difficulties of enacting environmental reform at the metropolitan level in most cases of environmental racism, it seems that the most effective work towards remediation occurs within neighborhoods and blocks. Indeed, this mode of resistance plays out in my narrative, as some tenants worked to organize their complexes in the 1980s and 1990s. Evidence of resistance to environmental deterioration among residents appeared in the case of Kenilworth Courts, where longtime tenant Kimi Gray organized a tenant management organization that helped push back against some of the environmental nuisances that residents experienced on a daily basis. Other forms of resistance come through interviews with the press and Congressional testimony.

Largely free to chart the course of public housing development along with other planning agencies, the NCHA both amplified the environmental inequalities that it found and expanded them across the metropolitan region. By building housing complexes like Barry Farms and Lincoln Heights—both black projects built on formerly black agricultural lands—the NCHA repeated the pattern that had existed since Reconstruction of allocating sensitive and somewhat marginal lands to African Americans, to the benefit of white property owners. The NCHA concentrated hundreds of families on these sites, where it was unable to adequately address the envirotechnical obstacles that undermined decent, safe, and sanitary housing. Furthermore, as it built housing in rapidly developing eastern Washington, D.C., it increasingly relied on the few open spaces available, which were often located near environmental nuisances.

Progressive Era ideas about housing, urban space, race, and the environment were bound together in ways that tied racial characteristics to certain spaces. Reformers

[48] Washington, 184; see all of chapter six for more context.

understood white communities to be cleaner than black communities. One solution—which was put forward by Ihlder—was to simply remove poor African Americans from the city center and move them to neighborhoods that were designed to be less densely populated than the alleys and consisting of housing that would be appropriate for middle-class residents. But those new homes were built in African American neighborhoods that were themselves products of racial and environmental segregation. By repeating the patters of black and white settlement throughout eastern Washington, D.C., the NCHA created an envirotechnical regime that conflicted with its pursuit of decent, safe, and sanitary housing. African American families who were moved out of the alleys confronted new sets of environmental burdens in some public housing complexes as a result of the surrounding landscape. The NCHA perpetuated patterns of environmental racism in the District of Columbia in the materials it chose and the sites it selected.

The Historical Significance of Washington, D.C.

The federal capital has served as both a testing ground for new national policies and as a model city since it was first planned in the late-eighteenth century. Debates over the plan of the federal city in the 1790s were generally about how best to represent the United States, its system of government, and its ideals to individuals encountering the capital. Ultimately, Pierre Charles L'Enfant designated two sites for buildings: a hill on top of which the meeting place for federal representatives would meet; and the President's house, lined with gardens and fountains to welcome visitors. The plan for the City of Washington was meant to impart the ways that the United States tried to retain the local ideals of its system of government within the federal capital. The meeting place for local representatives and the inviting nature of the President's home emphasized that the United States was a nation of citizens equal in stature, even though citizenship was highly circumscribed by contemporary standards.

The significance that Washington's planners and residents attached to their surroundings remained throughout the nineteenth and twentieth centuries. In a 1947 editorial in *The Washington Star*, John Ihlder wrote about how visitors perceived the state of the capital. He compared the architectural beauty to the nearby blighted neighborhoods, stating that "[w]hen a visitor to Washington leaves Union Station, he gets

an inspiring view of the Capitol, symbol of a very great and a very rich nation…. But, almost at once, as he journeys to the center of the city, he gets glimpses of the edge of a slum which extends far to the north and west."[49] Similarly, in 1959 Jean White, a staff reporter for the Washington Post, expressed some of the anxieties that Washingtonians felt about Nikita Khrushchev's pending visit. Unlike Ihlder's imagined visitor, Khrushchev was real, and was being driven from east to west. White wrote that "Khrushchev will get a small slice of America without any decorative icing on his 25-minute auto trip into the Nation's Capital" along Suitland Parkway. She went on to mention the tidy middle-class homes and churches that lined the route before referencing some of the "slums and slum clearance projects" taking place in Southeast and Southwest Washington. White also noted that Khrushchev would be able to see "the still-uncompleted public housing development, Sheridan Terrace."[50] White concludes by writing that Khrushchev's trip would end with glimpses of the monumental edifices of downtown Washington and the National Mall. White clearly expressed some anxiety about the appearance of blight on Khrushchev's route, but hoped that the appearance of buildings in the downtown section of the federal city would stand apart from some of the neglected communities in southern Washington.

Residents of Washington have long been invested in their city's appearance. Washington was meant to both exemplify the successes of the American system of government and educate visitors about the virtues of that system. Public housing, therefore, was seen by most reformers as a way to bring certain neighborhoods up to the standards that the built environment of Washington, D.C. was supposed to project. Public housing advocates and planners often spoke of their goals by making reference to the ways that public housing, in tandem with urban renewal, could transform the cityscape by erasing the alley dwellings and inculcating proper moral and social values in the new residents of public housing projects. In the late-nineteenth and early-twentieth centuries, Washingtonians expressed anxiety about the proliferation of blighted alley communities

[49] John Ihlder, "Washington's Slums," *Washington Star*, October 8th, 1947.
[50] Jean White, "Federal Buildings and Slums on Khrushchev's Route Here," *The Washington Post, Times Herald*, September 6th, 1959.

in the shadow of the Capital Building.[51] Many of those same Washingtonians likely expected that public housing could remedy the blighted conditions that seemed, to those residents, especially out of place in the capital of the United States.

But Washington, D.C. is also a distinctive location for political reasons. One reason why the NCHA was such an influential force on the metropolitan landscape was because of the political power structure in Washington, D.C. Congress, consisting of elected representatives who were not beholden to the voters of the federal capital, could be a complicating factor in the NCHA's plans. Legislators consistently allocated money to the NCHA for maintenance and operations during the postwar period, although its appropriations declined over time, as discussed in chapter one. Most of the pressure on the NCHA came from other metropolitan agencies, which influenced where it built and how much housing was needed, rather than from politicians. Political pressures shaped the outcomes of the NCHA's work, but in ways that were different than in other cities, where local and state politicians clashed each other and with public housing planners.

The paradox that the NCHA's tenants faced was their proximity to Congress—which gave them the ability to testify directly to the federal government—and the simultaneous absence of a local government that could participate in the housing planning process.[52] As Chris Myers Asch and George Derek Musgrove wrote in *Chocolate City: A History of Race and Democracy in the Nation's Capital*, the District of Columbia in the mid-twentieth century was "the voteless capital of a democracy, a seat of government highly sensitive to shifts in national politics, a city situated in the South but torn politically between North and South."[53] Although living in the shadow of the Capital, the NCHA's tenants were disenfranchised and were largely governed by the whims of Congress or—more often—its agents, like the NCHA. Public housing tenants

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[51] Godfrey Frankel and Laura Goldstein, *In the Alleys: Kids in the Shadow of the Capital* (Washington: Smithsonian Institution Press, 1995).

[52] This is not to say that local governments in other cities were particularly responsive to the needs of public housing residents during the same period. For example, when the Chicago Housing Authority was brought under the oversight of the Chicago City Council in 1949, local politicians began to shore up the boundaries of black communities, rather than work towards multi-racial housing planning. See Hirsch, 223. Rather, the tenants of the NCHA had no political capital in the public housing planning process at all; they could not have voted for politicians who might have supported their interests to a greater extent, because there was no government to vote for in the District of Columbia until it gained home rule in 1973.

[53] Chris Myers Asch and George Derek Musgrove, *Chocolate City: A History of Race and Democracy in the Nation's Capital* (Chapel Hill: The University of North Carolina Press, 2017), 2.

were, however, able to press their needs through activist organizations, which met with mixed success during the 1960s.[54] Despite the absence of local and federal representation, by the 1960s residents of public housing were better able to confront the unelected leadership of the NCHA. As discussed below, part of their political education came from their confrontations with the landscape and environment of public housing.

Chapter Summary

The first two chapters are meant to set the stage for the work that the NCHA did in the 1940s, 1950s, and 1960s. The first chapter provides an institutional history of the NCHA until the mid-1950s. The purpose of that chapter is twofold. First, I intend to describe the ideological and institutional origins of the NCHA. By providing a brief biography of John Ihlder, I show how Progressive ideologies guided the early housing reform efforts of the Authority. Emerging first as the Alley Dwelling Authority (ADA), Ihlder intended to remove blighted communities and rehabilitate alleys across the District of Columbia. In 1938, the ADA was authorized to begin building public housing in tandem with its alley rehabilitation projects. The Second World War provided the ADA with an expanded mandate—to build housing across eastern Washington, D.C. to accommodate the influx of wartime workers—but also pressure from the United States Housing Authority to build quickly. This dual mandate shaped the NCHA's ability to adequately account for envirotechnical obstacles at its housing sites. After the Second World War, the NCHA dealt with dwindling Congressional appropriations. By the late-1950s, however, the Authority again had to construct housing to accommodate demographic shifts in the District of Columbia, as thousands of residents displaced by urban renewal sought new homes. Once again, the NCHA had a mandate to build housing on a large scale. It did not, however, have the funds necessary to adequately address envirotechnical constraints at its sites.

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[54] Ibid., 348. The 1960s marked a moment when residents of NCHA properties were better able to press their claims to a decent, safe, and sanitary environment. For one thing, the NCHA leadership changed. With Ihlder and Ring gone, the NCHA turned to Walter Washington. Douglas Martin, "Walter Washington, 88, Former Mayor of Washington, Dies," *The New York Times*, October 28th, 2003. Washington was raised in the District of Columbia, and he was active in various community organizations before he took over the leadership of the NCHA. Ibid., 352. Furthermore, the Civil Rights movement of the 1960s sparked activist movements that sought to work within and outside of electoral politics.

The second chapter describes the landscape of eastern Washington, D.C. Rolling, rugged, and tree-lined, the terrain and topography of eastern Washington, D.C. had long limited private developers' interest in housing construction. Smallholding black farmers had made most of the modifications to the landscape prior to the NCHA's intervention. They built an envirotechnical regime capable of providing them with basic dietary staples. When the NCHA encountered that landscape in the early 1940s, they saw a location that lacked the modern amenities and infrastructures necessary to support decent, safe, and sanitary housing. Chapter two concludes with a brief description of how the NCHA made sense of the landscape of eastern Washington, D.C.

The following chapters proceed roughly chronologically, focusing on five case studies: Barry Farms, Lincoln Heights, Highland Dwellings, Kenilworth Courts, and Sheridan Terrace. The first three complexes were built during and immediately after the Second World War. The latter two were built in the late-1950s, with some work continuing on Sheridan Terrace into 1960 and 1961. Although the conditions under which the NCHA planned and built its complexes during the war years and in the postwar period were in many ways different, the NCHA confronted similar problems in the siting and later management of the postwar complexes.

Chapter three focuses on Barry Farms. The history of the site reveals clearly the extent to which the NCHA's work represented a rupture with past land uses and settlement patterns. Although it had been sparsely populated for generations prior to the NCHA's work, within just two years the Authority transformed the site into a modern urban neighborhood. The process of doing so necessitated the overthrow of the previous envirotechnical regime. Between the Civil War and the 1940, the black farmers who had long lived in the area had arranged the streams, forests, and the level grounds that they could find to wrest a modest living from the landscape. The NCHA entered the region in 1940, and developed an ambitious plan to strip many of the trees and re-grade much of the site in order to accomplish two goals. First, the new envirotechnical system that the NCHA was building was meant to support new housing on a scale large enough to relieve some of the pressure on existing city neighborhoods as a result of Washington's demographic expansion. Second, the NCHA desired decent, safe, and sanitary housing. This meant that the homes needed modern infrastructures, but also plenty of greenspace.

Ultimately, the envirotechnical obstacles engendered by the site led to a substantial deterioration of the quality of the housing stock at Barry Farms. Soil did not stay in place, but slipped and ran-off during heavy rains. Gas lines failed as water pooled in the lower elevations of the buildings. Terraced slopes eroded, damaging both the local greenspace as well as the vistas that the NCHA hoped to engineer. The new envirotechnical system that the NCHA built was riven through with envirotechnical obstacles that deteriorated the quality of life and health of Barry Farm's black residents.

Lincoln Heights experienced many of the same problems as those at Barry Farms. In chapter four I describe how the NCHA overthrew the previous envirotechnical regime built by local black farmers and built on top of it a new landscape, meant to support a large housing tract. During construction, however, the NCHA's contractors noticed several material issues that would later plague the complex. In addition to erosion and soil slippage, Lincoln Heights also crumbled as rainwater penetrated the bitumen coating on the roofs. The gypsum boards that the contractors reluctantly used for building the complex's roofs were not suitable for an area with such heavy seasonal rains. The material deficits of the Lincoln Heights complex—which were products of the wartime economy—amplified the role of the environment as it stressed the NCHA's buildings. Lincoln Heights and Barry Farms both represent the dual envirotechnical obstacles of siting and materials. Combined, the transformation of the NCHA's sites and the poor materials it used gave rise to the third envirotechnical obstacle: the large-scale movement of black families out of substandard alley dwellings and into substandard housing. The NCHA's housing stock would continue to fall apart as materials failed and the site shifted and changed in response to natural and technological forces. Black families would be the ones to suffer from the failures of the NCHA's new envirotechnical system.

In the fifth chapter I relate the history of Highland Dwellings. The Highland Dwellings complex suffered less from the first envirotechnical obstacle—that of siting—and far more from the second, which was the critical failure of the materials used in its construction. The residents of Highland Dwellings—which was restricted to white families until 1953—suffered through a rash of fires in the 1940s, 1950s, and 1960s, which claimed several lives. The press found that responsibility for the fires was not with the residents, but rather with the NCHA, which ignored the District of Columbia building

code at the time that Highland Dwellings was under construction. As was the case for Barry Farms and Lincoln Heights, the NCHA ignored the building code at Highland Dwellings because the FPHA requested that housing construction continue at a rapid clip. The failure of the materials within Highland Dwellings, and their inappropriate placement within the complex did not effectively mitigate fires or prevent their spread to adjacent apartments and buildings.[55]

Environmental historians consider fire to be a significant agent of historical change in urban areas. Fires have also offered opportunities for planners, engineers, and policymakers to rebuild parts of the city in ways that would prevent or mitigate future infernos. Highland Dwellings shows not just how the materials used in the wartime complexes allowed environmental forces—in this case, fire—to largely undermine the safety of dwelling units, but also how the NHCA turned away from major repairs or renovations in order to mitigate future disasters. The reasons for the NCHA's restraint in the face of devastating conditions at Highland Dwellings are complex and explored throughout this dissertation. Yet, Highland Dwellings offers an example of the NCHA's general inability to genuinely confront the envirotechnical obstacles at public housing complexes.

After chapter five, my narrative shifts into the postwar construction period. Kenilworth Courts, which constitutes the focus of the sixth chapter, is located in upper Northeast Washington, D.C., close to the banks of the Anacostia River. Its history clearly shows the legacy of environmental injustice that the black tenants of the NCHA routinely faced. Black residents in Kenilworth had long been restricted to the low-lying and marshy areas of the Kenilworth neighborhood, and the public housing complex there largely conformed to those historical patterns. More significant, however, was the NCHA's decision to build Kenilworth Courts nearly adjacent to an open burn landfill. In 1968, after the death of a local child in one of the afternoon trash burns the District of Columbia's sanitary engineers finally decided to close the antiquated dump. After doing so, the city worked to turn the former dumpsite into a city park. This process, however, disturbed the residents of Kenilworth Courts as the smoldering incinerator ash that was

[55] As described in chapter three, the NCHA built Lincoln Heights with a simple asbestos sheet between units, as opposed to the masonry wall called for in the District of Columbia building code. Asbestos could not withstand the intense heat and size of the fires at Highland Dwellings.

used to landscape the park was first deposited almost adjacent to their homes. The history of Kenilworth Courts clearly demonstrates that even as the NCHA envisioned its purpose as providing decent, safe, and sanitary housing, the sites that it selected were themselves products of a long historical linkage between African Americans and insalubrious environments. Although the NCHA hoped to rectify those circumstances, it in fact perpetuated the historical environmental burden placed upon black Washingtonians.

In chapter seven, I focus once again on the envirotechnical obstacles engendered by siting. Sheridan Terrace, which is the subject of that chapter, was built well after the wartime restrictions on building materials passed. It was designed as a series of large apartment complexes, sinuously aligned along Suitland Parkway, which had been built over a covered sewer during the 1940s. Despite the improved material circumstances of the postwar period, Sheridan Terrace experienced many of the same problems as Barry Farms and Lincoln Heights. Inside of the complex, floors and walls became warped and plaster fell from the ceiling. Outside, the terraces around the buildings slowly eroded. A soil mechanics expert who the NCHA invited to assess the construction found evidence of slippage at one of the buildings. The accumulated damage that stemmed from the local environmental pressures meant that the residents of Sheridan Terrace came to live in unsanitary and deteriorating homes.

In addition to the envirotechnical obstacles posed by the siting of Sheridan Terrace, residents contended with automotive exhaust from the Suitland Parkway, which ran adjacent to their homes. The Parkway was a heavily trafficked corridor through Southeast Washington. This meant that Sheridan Terrace, like the other complexes described in this dissertation, contributed to the balance of environmental burdens weighing on poor black Washingtonians. The envirotechnical obstacles that the NCHA encountered undermined its ability to provide decent, safe, or sanitary housing to its predominantly African American tenants.

Chapter One

Reconciling Changing Political and Economic Realities: A Brief History of the NCHA and its Efforts to Build Decent, Safe, and Sanitary Housing in the Mid-Twentieth Century

The National Capital Housing Authority was first established as the Alley Dwelling Authority in 1934.[56] John Ihlder, who would serve as the first chair of the ADA and the NCHA until 1952, was a prominent housing reform activist. This chapter will explore Ihlder's early life and works as a means to understand the ideology that guided the NCHA's work. Decent, safe, and sanitary was not simply a motto; it was a way of perceiving good housing versus poor housing. For Ihlder and his fellow housing reformers, good housing was more than just the provision of decent homes. They saw housing as inextricable from its surroundings. Ihlder was interested less in simply building homes than furnishing new neighborhoods. By revealing what exactly Ihlder meant by decent, safe, and sanitary, the environmental stresses that the NCHA grappled with—and their role in undermining the goals of the NCHA planners and the vision of its founder—become much clearer.

This chapter also provides a brief overview of some of the early institutional and political relationships that would later constrain the NCHA's ability to respond to envirotechnical obstacles at its complexes. The Authority's relationship with Congress, the RLA, and the National Capital Parks and Planning Commission were important factors that contoured the achievements and limitations of the public housing program in Washington, D.C.[57] According to the envirotechnical model, the contests among different bureaucracies over the transformation of the metropolitan landscape during and after the war years were significant aspects of the operation of the envirotechnical system. For the NCHA, its changing relationships with Congress and other local and federal agents of urban renewal determined how effectively it could address envirotechnical obstacles at its sites.

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[56] *Alley Dwelling Act of 1934*, Public Law 207, 73rd Cong., 1st Sess. (June 12th, 1934), *U.S. Statutes at Large* 465, 930.

[57] Congress established the National Capital Parks and Planning Commission in 1926 to oversee all planning activities in the District of Columbia. See Frederick Gutheim, *Worthy of the Nation: The History of Planning for the National Capital* (Washington: Smithsonian Institution Press, 1977), 159-160.

A Progressive's Progress: John Ihlder Encounters the Housing Reform Movement, 1900-1934

John Ihlder was the primary author of the ADA's enabling legislation. He had spent his early career involved in a number of housing activist organizations, usually in leadership positions. New Deal housing organizations were full of reformers who had cut their teeth in Progressive Era movements. Mary Kingsbury Simkovich, for example, emerged from the Settlement Movement of the late-nineteenth and early-twentieth centuries to become the head of the National Public Housing Conference, which pushed for a national public housing program in the earliest days of Roosevelt's first administration.[58] Like Simkovich, Ihlder's work throughout the 1910s and 1920s shaped the way that he built the District of Columbia's housing program.[59]

The young Ihlder first became interested in housing reform in 1900, when he graduated from Cornell University and took a job as a reporter for *The New York Evening Sun*, covering housing in New York City. After he interviewed famed social reformer and documentarian Jacob Riis, Ihlder decided to become more involved in housing issues.[60] By 1911, Ihlder was the Secretary of the National Housing Committee, and arranged for speakers like Jane Addams—a prominent social worker, activist, and founder of the

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[58] Gail Radford, *Modern Housing for America: Policy Struggles in the New Deal Era* (Chicago: The University of Chicago Press, 1996), 89. The Settlement Movement emerged in the last years of the nineteenth century of the US as an attempt, among private citizens, to bridge the yawning gap between the economic, social, and medical conditions of the poor and more prosperous citizens. Settlement homes often provided social services and instruction for poor immigrants. See Michelle Chen, "From Windows to Gateways on the Lower East Side: The Henry Street Settlement from the Progressive Era to the Great Society," *The Historian* 75, no. 4 (Winter 2013): 760-780.

[59] The idea that a line runs through the Progressive, New Deal, and postwar eras is not a new one. Robyn Muncy traced the continuities among those periods though the life and work of Josephine Roche, who became the Assistant Secretary of the Treasury under Franklin Roosevelt's administration after implementing pro-labor policies as the majority shareholder in a Colorado coal company. Roche made important contributions to New Deal era health and welfare policies, which were implemented, partially, under the Johnson administration's Great Society program. See Robyn Muncy, *Relentless Reformer: Josephine Roche and Progressivism in Twentieth-Century America* (Princeton: Princeton University Press, 2015).

[60] Eve L. Barsoum, "Colonial Georgetown: The Power of Myth," in *Re-Creating the American Past: Essays on the Colonial Revival*, ed. Richard Guy Wilson (Charlottesville and London: University of Virginia Press), 185. Most of what is preserved about John Ihlder's personal life refers to his zeal for housing reform. Colleagues left few memories in print that did not pertain to his professional life. My research revealed one photograph, attached to his obituary, that shows a man who could easily be confused for any other bureaucrat brought to the District of Columbia during the New Deal.

Settlement Movement in the United States—to visit the Committee.[61] In his obituary, *The Washington Post* stated "John Ihlder…was almost synonymous with public housing in the Washington area. After serving as field secretary for the National Housing Association and organizing housing movements in Philadelphia, Boston, and Pittsburgh he came to Washington in the depths of the great depression with a burning zeal for wiping out its slums."[62]

After traveling throughout the northeastern United States helping to establish housing reform organizations, Ihlder finally made his way to the federal capital. He settled into a comfortable row house on P Street NW in Georgetown, and immediately began making significant contributions to the legislative history of public housing. He acted as "the principal author of the Washington Alley Dwelling Act," which was signed into law by President Franklin Roosevelt in 1934. That law would empower the ADA—among the nation's first urban renewal agencies—to re-plat streets, demolish substandard dwellings, and to care for the residents of those alleys "in the interest of public health, comfort, morals, safety, and welfare."[63] Ihlder would serve as the head of the ADA and its successor agency, the NCHA, for eighteen years. Through his efforts, Ihlder bridged the ideological and political foundations of Progressive Era housing reform efforts to the institutional and physical workings of the New Deal and post-Second World War housing authorities. He was a guiding force behind the operation of the NCHA from 1934 until 1952.[64]

When the Alley Dwelling Authority was first authorized in 1934, it was given a fairly specific mandate to simply clean the alleys and to demolish or rehabilitate insufficient alley homes.[65] The law reflected Congress's apprehension about allowing a

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[61] Letter from Jane Addams to John Ihlder, October 18th, 1911; Jane Addams Digital Collection, Ramapo College of New Jersey, https://digital.janeaddams.ramapo.edu/items/show/9859 (accessed March 5th, 2020).
[62] "John Ihlder," *The Washington Post and Times Herald*, May 21st, 1958.
[63] *District of Columbia Alley Dwelling Act of 1934*.
[64] "John Ihlder," *The Washington Post and Times Herald*, May 21st, 1958.
[65] For background literature on the alley rehabilitation movement in Washington, DC, see: James Borchert, *Alley Life in Washington: Family, Community, Religion, and Folklife in the City, 1850-1970* (Urbana and Chicago: University of Illinois Press, 1980); Suzanne Berry Sherwood, *Foggy Bottom, 1800-1975: A Study in the Uses of an Urban Neighborhood* (Washington, D.C.: George Washington University, 1978); Howard Gillette, *Between Justice and Beauty: Race, Planning, and the Failure of Urban Policy in Washington, D.C* (Baltimore: Johns Hopkins University Press, 1995); Barbara J. Little and Nancy J. Kassner, "Archeology in the Alleys of Washington, D.C.", in *The Archaeology of Urban*

public agency to build housing. When the bill first mentions housing construction, buried on the second page after several stipulations and rules, it stated that the ADA could, through low-interest loans, promote home construction, but the agency was not permitted to contract out projects on its own.[66] Thus the ADA's first forays into housing construction were small in scale. Generally, the ADA concerned itself with improving the conditions of blighted areas by rehabilitating a few homes in scattered sites.

But the ADA's approach to alley clearance was not simply a cosmetic issue. It approached its work through the ideological lens of earlier Progressive reform efforts. A number of different sources contributed to the mainstream of housing ideology in the early twentieth century. The urbanist Alexander von Hoffman lists among those intellectual currents ideas about "the formation of individual character, the importance of home life, spiritual redemption, the nature of poverty, the causes of crime and vice, and the sources of disease[,]" which converged to give rise to a "moral environmentalist approach to the urban poor."[67] This vision tied housing intimately to its surroundings, elevating the issue from one of proper housekeeping and property upkeep to one of improving the health and vitality of whole blocks and neighborhoods. To Progressive reformers like Ihlder, the home was not separate from its surroundings. To save the city and preserve its neighborhoods, the local government had to be empowered to coordinate development on at least a neighborhood scale.

Within this moral environmentalist outlook, the slum or blighted community threatened the health of the surrounding neighborhoods. In Progressive reformers' minds,

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Landscapes: Explorations in Slumland, eds. Alan Mayne and Tim Murray (Cambridge: Cambridge University Press, 2001); James S. Paige and Margaret M. Reuss, *Safe, Decent, and Affordable: Citizen Struggles to Improve Housing in the District of Columbia, 1890-1982* (Washington, D.C.: University of the District of Columbia Press, 1983). The background literature on the alley rehabilitation movement is extensive, and more literature can be found in the bibliography. The municipal government of the District of Columbia had tried unsuccessfully to deal with the problem of substandard alley dwellings. The first law calling for the removal of such structures was passed in 1870, when the District government tried to end the construction of shoddy wooden alley dwellings. The next law came in 1892, which banned construction in certain types of alleys. Another similar law was passed in 1914, and again in 1922. Such efforts were largely ineffective until the interventions of the Alley Dwelling Authority and, in the postwar period, the city's urban renewal agency. See Borchert, 13; Senate Committee on the District of Columbia, *Discontinuance of Dwellings in the District of Columbia: Hearings on S. 2675*, Sixty-Seventh Cong., 2nd sess., 1922, 5.

[66] *District of Columbia Alley Dwelling Act of 1934*.

[67] Alexander von Hoffman, "The Origins of American Housing Reform," *Joint Center for Housing Studies* W98-2 (Cambridge: Harvard University, 1998), 2.

blight was connected to vice, delinquency, and disease. As blight spread it carried those asocial and insalubrious qualities to the rest of the urban environment. By 1936, as the federal government debated the contours of a national housing program, the slum was well defined by housing reform activists. Von Hoffman quotes James Ford, a professor at Harvard University during the 1930s, when he stated that "[t]he slum is a residential area…in which the housing is so deteriorated, so substandard or so unwholesome as to be a menace to the health, safety, morality, or welfare of the occupants."[68] "Ford's definition[,]" von Hoffman writes, "contained a striking assumption that a man-made physical environment, the slum, had the power to influence many aspects of the human condition, including both physical well-being and social behavior. The definition identified poor housing as the root cause of the deleterious residential environment and, by implication, called for housing reform to counter the threats that the environment posed."[69] Housing reform, in the minds of New Deal era planners, had the ability to also dramatically transform neighborhoods. By removing the alley dwellings, Washington's reformers hoped to salvage and improve the appearance of surrounding areas, which could then instill better morals and health in the local populations.

It is important to note that despite the planners' declared interest in alleviating the plight of poor residents of the District of Columbia, their brand of reform was heavily paternalistic. The roots of paternalistic approaches to urban reform stretch deep into the early nineteenth century, and were shared across the English-speaking world. For example, in the mid- to late-nineteenth century, wealthy and civic-minded urbanites were caught up in enthusiasm for washing the bodies of the poor. As water systems proliferated across the United States, reformers viewed dirty bodies as inherently harmful to the health and wellbeing of the urban whole. Reformers also saw dirt as corrupting and dangerous to the health of the social body. Hence, washing the bodies of the poor and cleaning dirty parts of the city were healthful for the moral and physical health of the individual and society at large.[70] Over successive decades, the complex connections that reformers drew between bodies, dirt, blight, and crime melded into the moral environmentalist ideas of Progressive reformers.

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[68] Ibid., 3.
[69] Ibid.
[70] For more context on this, see Smith, 161-195.

Ihlder had been steeped in this moral environmentalist outlook as a consequence of his formative years reporting on, and getting involved with, philanthropic housing reform efforts. His later writings revealed the extent to which he had been steeped in the prevailing reform ideology. For example, referring to a project to construct garages in some of the Capital's blighted alleys, Ihlder wrote that the "projects were an expression of the Authority's desire to test the theory of removing rot spots in otherwise good neighborhoods[.]" "So in these instances", the report continues, "it merely cut out the rotten core, hoping that the sounder areas would care for themselves."[71] Ihlder's vision was to dramatically remake portions of the city. Since he would eventually have to seek out land that was rolling, hilly, and forested, his efforts would also engender significant envirotechnical obstacles, considering the scale of the projects he would oversee.

From the ADA to the NCHA: The New Deal, World War Two, and New Directions in Washington's Housing Program, 1938-1945

By the time of the New Deal period, the paternalistic approach lingered in municipal policy, as Ihlder's remarks reflect. But during the preceding decades, reformers wed the paternalistic thinking of Progressivism to a technocratic faith in expertise. The planners of the NCHA and other local and national projects during the 1930s and 1940s were increasingly divorced from the concerns of local communities, and more interested in sweeping programs and projects. The New Deal empowered them to take up those tasks. Without any local policymakers to contest its vision, the ADA—and later, the NCHA—would be uniquely positioned relative to other urban renewal agencies and public housing authorities to roll out its siting and planning in the late-1930s and 1940s.

[71] National Capital Housing Authority, 8.

Rotted through.—Slum conditions, beginning in the alley in this square, have spread to the street dwellings.

An excerpt from the National Capital Housing Authority's ten-year report to Congress, published in 1944. The caption for this image—which was a part of a brief pictorial history of the NCHA's work between 1934 and 1944—captures the way that Ihlder thought about the spread of blighted conditions. National Capital Housing Authority, *Report of the National Capital Housing Authority for the Ten-Year Period 1934-1944* (Washington, D.C.: GPO, 1944), 218.

The first legislative step towards the large-scale projects of the 1940s came in 1938, when Congress passed an amendment to the authorizing legislation for the ADA. Prior to that amendment, "the Authority could not build housing on the less expensive outlying sites, but was confined to the built-up sections of the city and was therefore dependent upon private builders to provide elsewhere for the overflow population from densely populated areas[.]"[72] Furthermore, the ADA could only pursue smaller projects because it had a Congressional allocation of $500,000, equivalent to a little more than $9.5 million in 2019. Also, prior to 1938, Congress considered the ADA to be more of an urban renewal agency, which worked to reclaim blighted communities. Providing housing was not its primary objective, despite John Ihlder's hopes and intentions. Therefore, between 1934 and 1938, the Authority's directors worked to expand the organization's mandate and budget.[73]

In 1937, Congress passed the Wagner-Steagall Act. It allowed states and localities across the country to build low-income public housing with federal funding and

[72] National Capital Housing Authority, *Report of the National Capital Housing Authority for the Ten-Year Period 1934-1944* (Washington, D.C.: GPO, 1944), 11.
[73] Ibid., 25-33.

assistance.[74] The law's preamble stated explicitly that part of its goal was to remedy "the acute shortage of decent, safe, and sanitary dwellings for families of lower income[.]"[75] Wagner-Steagall was a marked departure from earlier housing construction efforts, which often relied on philanthropic donations from private citizens and were small in scale, perhaps consisting of a city block.[76] The problem for the ADA, however, was that it was not considered to be a public housing authority, and so the newly available federal funds were not released to Ihlder and his planners. So, between 1937 and 1938, Ihlder and his board worked with Nathan Straus, the son of the founder of Macy's Department Store and the first head of the United States Housing Authority, and Congress to amend the 1934 Alley Dwelling Act in the hopes of allowing the ADA to function as a public housing organization. All the while, Roosevelt granted the ADA emergency funds through executive orders issued to the Public Works Administration.[77] In 1938, Congress passed the proposed amendments, allowing the ADA to function as Ihlder had intended. According to the NCHA's first ten-year report, "[t]he approval of the amendments…meant that the Authority must immediately plan a considerably expanded program."[78]

The first project that the NCHA undertook with its new and expanded mandate was the Fort Dupont project, on "a rugged, hilly, and heavily wooded site of approximately 60 acres" on East Capital Street across the Anacostia River from downtown Washington.[79] The ADA would go on to build four other projects prior to the United States' entry into the Second World War. Two were in Navy Yard, in a built-up section of the city's waterfront. One was in a still fairly undeveloped section of Northwest D.C., near Howard University and the African American neighborhoods along North Capital Street and Florida Avenue. The last, the Frederick Douglass Dwellings, were built just about a mile to the south of Fort Dupont in eastern Washington. All told, the pace of construction prior to 1941 was much slower than it would be during the war.

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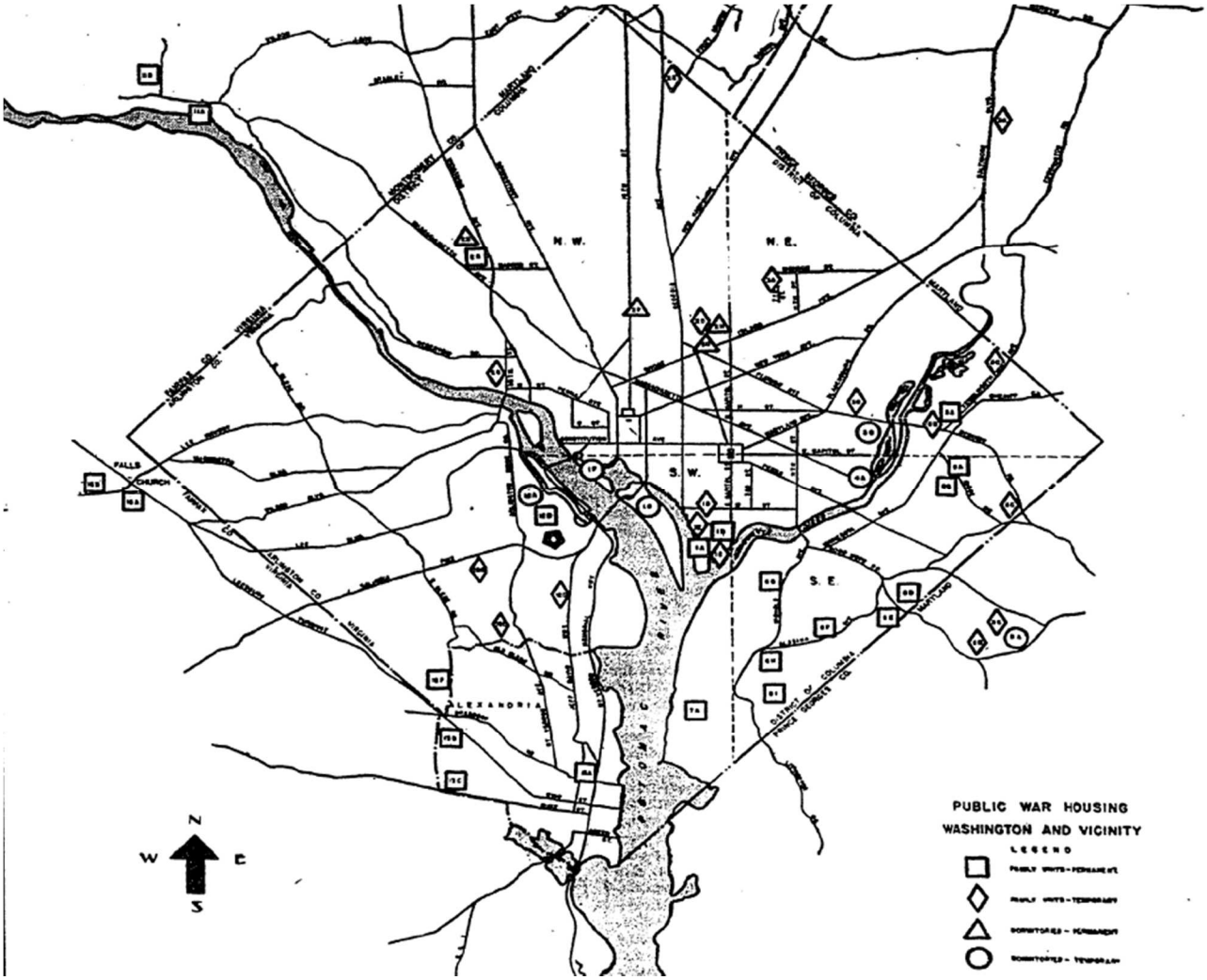
[74] *Housing Act of 1937*, Public Law 75, 75th Cong., 1st sess. (Sept. 1st, 1937).
[75] Ibid.
[76] Elizabeth Hannold, "'Comfort and Respectability': Washington's Philanthropic Housing Movement," *Washington History* 4, no. 2 (Fall/Winter 1992/1993): 20-39.
[77] National Capital Housing Authority, 25-33.
[78] Ibid., 33.
[79] Ibid., 37.

This was in part because in late-1941, Congress authorized the ADA to begin building housing for wartime workers in the nation's capital.[80] Ultimately, between 1935 and 1945 the NCHA had built homes for 7,577 low-income families.[81]

By 1942 housing planners in the District of Columbia and the surrounding counties in Maryland and Virginia had made a good deal of progress on housing construction. This was partially a function of the numerous different agencies that had been empowered to construct housing for defense industry workers as a result of the Lanham Act. The Department of the Navy, the FPHA, and the Alley Dwelling Authority, among other agencies, participated in wartime housing construction. The new developments were meant "to ease Washington's serious shortage of homes for families."[82] Most of the Alley Dwelling Authority's projects, as opposed to those of the Departments of War and the Navy, were permanent homes, meant to last after the end of military conflict abroad.

[80] Ibid., 67.
[81] Ibid., 80.
[82] "Housing Developments in the Washington Area," *The Washington Post,* October 25th, 1942.



This map shows new public housing developments being constructed in 1942. From *The Washington Post*, October 25th, 1942. Permanent housing is marked with a square, whereas temporary housing is shown with diamonds. Triangles and circles denote dormitory-style housing. Almost all of the housing east of the rivers was supposed to be permanent.

The ADA was responsible for the construction of at least twenty-five public housing complexes across the city of Washington during the first two years of the war. Those complexes were expected to house, in total, 5,459 families to ease the stress that the city's rapidly growing population placed on the housing market.[83] Between 1930 and 1950, the number of residents of the District of Columbia swelled from 486,869 to

[83] Figure derived from image above. See Ibid.

802,178.[84] The population of the nation's capital, then, increased by 60.7% between 1930 and 1950. Reformers in the capital had long considered the private rental housing stock for impoverished residents inadequate. The ADA had to acquire land, and acquire it quickly, to house the growing population of the District of Columbia. Eastern Washington, D.C. offered swaths of land that lacked concentrated developments and large numbers of people.

The spate of construction during the Second World War marked two turning points in the history of the NCHA. First, with a mandate to build homes *en masse*, the NCHA was able to speedily acquire sites and begin the necessary work to make them suitable for public housing. This marked the rise of significant envirotechnical obstacles to the NCHA's program. The NCHA purchased sites that were across the Anacostia, on a rolling and rugged landscape that had numerous creeks and gullies running throughout. The region was also far more forested than much of western Washington, D.C., owning to its uneven terrain, and sparsely populated. As anthropologist Brett Williams writes, "[t]he residents of Barry Farms/Hillsdale could have lived in only a few rural outposts in the District of Columbia beyond its suffocating Black Belt[.]"[85] By 1940, Suitland Parkway had segregated the undeveloped Barry Farms community from the more populated Hillsdale area.[86] Ihlder was well aware of the topographical difficulties of the region. Commenting on Lincoln Heights, he stated in a letter to a colleague that

> Lincoln Heights is illustrative [of the difficulties] of constructing public housing. The site was suggested to us by the NCP&PC because, due to topography, land division, street layout, land titles, etc., it was impracticable for private development.[87]

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[84] Tables showing the population of the 100 largest cities in the United States from 1840 to 1990 are available online. See Cambell Gibson, "Population of the 100 Largest Cities and other Urban Places in the United States: 1790 to 1990," *Population Division Working Paper No. 27*, Population Division, U.S. Bureau of the Census, https://www.census.gov/population/www/documentation/twps0027/twps0027.html (accessed September 25th, 2019).

[85] Williams, 417.

[86] Ibid., 420.

[87] John Ihlder to the Members of the National Capital Housing Authority, February 5th, 1945; Lincoln Heights Dwellings 1943-1945, Box 1, Entry P 23: Records Regarding Public Housing Dwellings, 1943-1959, RG 302, NARA.

The NCHA would have to grade and terrace its sites to accommodate housing on the scale that Ihlder desired and to conform with his vision for decent, safe, and sanitary housing. It built many of those projects in environmentally sensitive areas near the Anacostia River, or on rolling hills further to the east. Those areas happened to be in or near predominantly black neighborhoods.

The second turning point had to do with problems of political economy during a major and prolonged military crisis. The Second World War strained domestic supply chains, and the NCHA was forced to build with less suitable materials. Ultimately, the poor functioning of the materials that the Authority acquired for its wartime projects led to the deterioration of its dwelling units. Furthermore, the NCHA's decision to ignore the District of Columbia building code—with the support of the FPHA—for its Barry Farms, Lincoln Heights, and Highland Dwellings facilities, and to avoid bringing outside experts in to assess the environmental qualities of the sites, meant that the NCHA would face two significant envirotechnical obstacles after the war.

The material situation during the Second World War was compounded by a changing financial situation for the NCHA. Until 1938, Congress directly appropriated funds to the ADA. Between 1934 and 1938, the Authority received a total of $500,000 from the legislature and $365,496.80 from the President's emergency funds.[88] The money was intended for alley rehabilitation, since the ADA had not yet been authorized to build low-income housing.[89] Although the Authority was allowed to disburse the funds as it saw fit, in order to demonstrate the practicability of alley rehabilitation the ADA treated the funds as low-interest loans, to be repaid at three percent interest. The ADA intended to use the revenue it received from the sale of rehabilitated properties to pay back its "loan". Ultimately, the ADA was nearly able to repay the principal, but could not pay the interest.[90]

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[88] National Capital Housing Authority, 178. $865,496.80 in 1938 would be worth a little less than $16 million in 2020.

[89] Funding for alley rehabilitation fell under Title I of the Alley Dwelling Act. The revised Alley Dwelling Act of 1938 would include Title II or the low-income housing construction part of the ADA's responsibilities. Money was allocated separately for the two programs.

[90] National Capital Housing Authority, 178.

The 1938 revisions to the original Alley Dwelling Act that allowed the Authority to build low-income housing unlocked a new source of funding: the United States Housing Authority. The USHA provided loans to localities across the country that began starting their own public housing programs. The ADA was approved for loans totaling $15,063,000, plus an additional $1,743,000 for Langston Terrace from the Public Works Administration.[91] Under the Lanham Act, for the years 1940-1944, the ADA was granted an additional $19,014,000 in loans from the USHA.[92]

Clearly, the ADA had a greatly expanded budget as it entered the 1940s. This budget conditioned the scale of the NCHA's envirotechnical program. It was given a mandate to build on a far larger scale than it had previously, and access to the funds to do so. Despite these new advantages, the NCHA also faced pressure to work quickly, which placed stress on the Authority's staff to perform necessary preparatory work.

Ihlder mentioned that his staff was under great pressure in his ten-year report to Congress.[93] For one thing, Ihlder confronted the question of how was the NCHA to handle a massive building program with such a small staff. The answer, Ihlder found, was to look to other federal and local offices to assist in its work. The NCHA would be responsible for finding sites, appraising them, and ensuring that the economic development of the sites was in accordance with sound city planning and good housing policy. The USHA would ensure that the economical development of the site was in compliance with the US Housing Act of 1937. The National Capital Parks and Planning Commission (NCPPC) would make sure that the NCHA's plans conformed to the general plan for the District of Columbia. Finally, the Board of Commissioners of the District of Columbia would inspect the site to ensure that the NCHA conformed to all rules about land use, public services, construction and building code, drainage, sanitary services, street and highway grading, gas lines, electrical lines, structural design, structural materials, and plumbing.[94] Of the four agencies involved in assessing the NCHA's plans and construction—including the NCHA itself, which was responsible for selecting the

[91] $15,063,000 in 1938 would be worth about $275 million in 2020.
[92] $19,014,000 in 1940 would be worth about $348 million in 2020. The ADA's figures come from its ten-year report. See National Capital Housing Authority, *Report of the National Capital Housing Authority for the Ten-Year Period 1934-1944* (Washington, D.C.: GPO, 1944), 1.
[93] Ibid., 32.
[94] Ibid., 35-36.

sites and materials that would surround and constitute public housing—the Board of Commissioners was responsible for inspecting the envirotechnical development of public housing sites.

Yet during the Second World War the Board of Commissioners played a very small role in the NCHA's projects. At its three wartime developments, the NCHA ignored the District of Columbia building code, and did not allow its inspectors to visit public housing sites. The FPHA backed up the NCHA as it resisted the Board in order to ensure continued progress at its housing sites. Therefore the officials who were most responsible for monitoring and inspecting the development of a new envirotechnical regime in eastern Washington, D.C. were barred from doing so. Construction and grading would proceed only under the eyes of the NCHA and its contractors. Ccorrespondence between the two, as well as Ihlder's public reports, revealed the scale of the envirotechnical obstacles that the Authority faced. Even with its increased funding, in its pursuit of decent, safe, and sanitary housing, the NCHA encountered significant envirotechnical obstacles. The pressure that the FPHA placed on the NCHA to build, and its role in blocking inspections from the Board of Commissioners, hampered the NCHA's ability to redress and mitigate the effects of those obstacles.

Postwar Housing Construction: Urban Renewal and the Development of Eastern Washington, D.C.

The end of the Second World War altered the context in which the NCHA administered its envirotechnical program. The model that I employ in the chapters that follow center the functioning of the hybridized landscape of public housing. On those landscapes, the environment was an active agent of historical change; political and economic issues developments shaped the NCHA's ability to respond to environmental changes. After the Second World War, the political pressures on the NCHA to build housing abated at the same time that better materials became more widely available. This did not result in better quality housing. Instead, siting remained a significant envirotechnical obstacle to the NCHA's program. Kenilworth Courts, although not exhibiting the structural problems that plagued other complexes, was built nearly adjacent

to an open-burn dump. Its residents suffered from the smoke, soot, and ash that drifted from the trash heaps as they were burned. Sheridan Terrace was built after much of Southeast DC had been developed. Like Kenilworth Courts, its residents suffered from smoke—in this case, exhaust from passing automobiles on Suitland Parkway. Sheridan Terrace also exhibited structural issues that would have been familiar to residents of the wartime projects: flooding, erosion, and leaking buildings.

Siting remained an envirotechnical obstacle in the postwar period for a few reasons. For one thing, the NCHA had successfully helped to transform much of eastern Washington, D.C. into an urban area that resembled the rest of the city. Residential neighborhoods, commercial strips, and industrial zones along the Anacostia River replaced many of the small agricultural communities nestled in the hills and valleys of the region. This meant, however, that space was at a premium, and less available as years went by. This was not too much of a problem for the NCHA during the mid-1950s. Ihlder's retirement in 1952 and the end of the war seven years prior had slowed the pace of construction. But after *Berman v. Parker* opened the floodgates of urban renewal in 1954, the NCHA once again had a mandate to build housing on a large scale. Thousands of residents were to be displaced from the SURA alone, and most could not afford to seek private rentals. Hence, the NCHA looked for sites on which to build, but encountered spaces that were far from ideal. The institutional relationship between the RLA and the NCHA helps explain, in part, why the NCHA scavenged for sites in the late-1950s.

Furthermore, the NCHA's financial situation in the late-1950s was different than it had been during the war years. The NCHA increasingly relied on bond issuances for new developments, rather than direct loans from the federal government.[95] Congress also restricted its appropriations to the NCHA. From 1934-1938, the Appropriations Committee had allocated $500,000 to the Authority. During that period, the ADA was allowed only to rehabilitate existing alleys, not to build new housing. Between 1945 and 1961, Congress allocated a total of $598,290 for the operation and maintenance of

[95] National Capital Housing Authority, *Annual Report for the Fiscal Year Ended on June 30th, 1962* (Washington: G.P.O., 1962), 24. By 1962, as a result of bond issuances, the NCHA had a total indebtedness of $67,555,000, equivalent to about $573,500,000.

existing properties.[96] By 1962, the NCHA was in charge of forty-six properties across the District of Columbia.[97] The financial constraints that the Authority encountered in the postwar period would significantly undermine the NCHA's ability to respond to envirotechnical obstacles at its sites.

As opposed to the history of some other public housing authorities, the history of the NCHA is marked by continuity in the vision of its leadership. John Ihlder left his post in 1952 on good terms and was succeeded by James Ring, who had long facilitated the operation of the Authority and was in a good place to pursue the types of developments that Ihlder had long promoted. Ring, in turn, was succeeded by Walter Washington in 1961, who had long worked within the NCHA and was familiar with the deep social and economic fractures between different groups in Washington, D.C.[98] In Chicago, on the other hand, the racial and economic reforms that the Chicago Housing Authority's first leader, Elizabeth Wood, pursued were abandoned after the Authority was brought under the control of the city council.[99] The NCHA was marked by a consistent vision and a legacy of leadership that was cultivated under John Ihlder. Thus the postwar and wartime projects were understood and largely planned in similar ways.[100]

There were more similarities than differences in the planning and construction that took place in the 1940s and 1950s, even as the external pressures of institutional politics and finances changed. Each of the following chapters takes care to describe not just the different environmental conditions of each of the complexes bur also their

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[96] All of the budget figures are available from FRASER, a product of the St. Louis Federal Reserve Branch, which compiled historical US budget. See FRASER, *Budget of the United States Government*, https://fraser.stlouisfed.org/title/budget-united-states-government-54?browse (accessed May 14th, 2020). The federal government did contribute substantial sums to the NCHA for debt services during the same period.

[97] National Capital Housing Authority, *Annual Report for the Fiscal Year Ended on June 30th, 1962*, 27.

[98] Douglas Martin, "Walter Washington, 88, Former Mayor of Washington, Dies," *The New York Times*, October 28th, 2003. Washington was born in the District of Columbia. His first job after obtaining his law degree was with the National Capital Housing Authority, where he would have worked under John Ihlder for about four years. Washington would helm the NCHA for five years between 1961 and 1966, before President Lyndon Johnson appointed him to serve as the President of the Board of Commissioners. Washington would later work as the Chairman of the New York City Housing Authority before returning to the District of Columbia when Johnson appointed him to the position of Mayor-Commissioner.

[99] Arnold R. Hirsch, *Making the Second Ghetto: Race and Housing in Chicago, 1940-1960* (Cambridge: Cambridge University Press, 1983), 238.

[100] Sheridan Terrace is an outlier in this history, however, because it consisted of a series of large apartment buildings. Still, it was planned and designed according to principles that resonated with those for the earlier complexes.

histories as the NCHA built and administered a new envirotechnical system in eastern Washington, D.C. First, however, it is necessary to describe the landscape that the NCHA encountered in eastern Washington, D.C. as it began its work in the early 1940s.

Chapter Two

Hills, Valleys, and Creeks: The Historical Landscape of Eastern Washington, D.C.

Until the 1940s, eastern Washington, D.C. was less densely populated than its counterpart on the opposite side of the Anacostia. There were a few neighborhoods nestled among the hills and ravines, and St. Elizabeth's hospital stood on a ridge overlooking the Anacostia River, but the NCHA, in partnership with the National Park Service and the National Capital Parks and Planning Committee would be the main drivers of urban development in the region beginning in the 1930s and 1940s.[101] Smallholding families and individuals played the primary role in transforming large sections of eastern Washington before that period. With some exceptions, developers showed little interest in the area until after the Second World War, by which time the NCHA and other agencies had extended infrastructure deeper into the region. The NCHA's efforts to modify parts of the landscape to accommodate public housing and to build out the necessary infrastructures to support large housing developments were key parts of the postwar transformation of eastern Washington, D.C.

Tidal Flats and Wooded Ridges: The Different Geographies of Western and Eastern Washington, D.C.

Most tourists and visitors to the District of Columbia are familiar with the flat landscape of the National Mall and the numerous museums, galleries, and federal offices lining the park. Heading north from the Mall, the city remains remarkably level until Florida Avenue. The curving and crooked street defies the neat plan that Pierre L'Enfant submitted to President George Washington on June 22nd, 1791.[102] The reason for Florida Avenue's distinctive shape is that it marks the former boundary between the City and the County of Washington. That boundary was more than political; in fact, Florida Avenue

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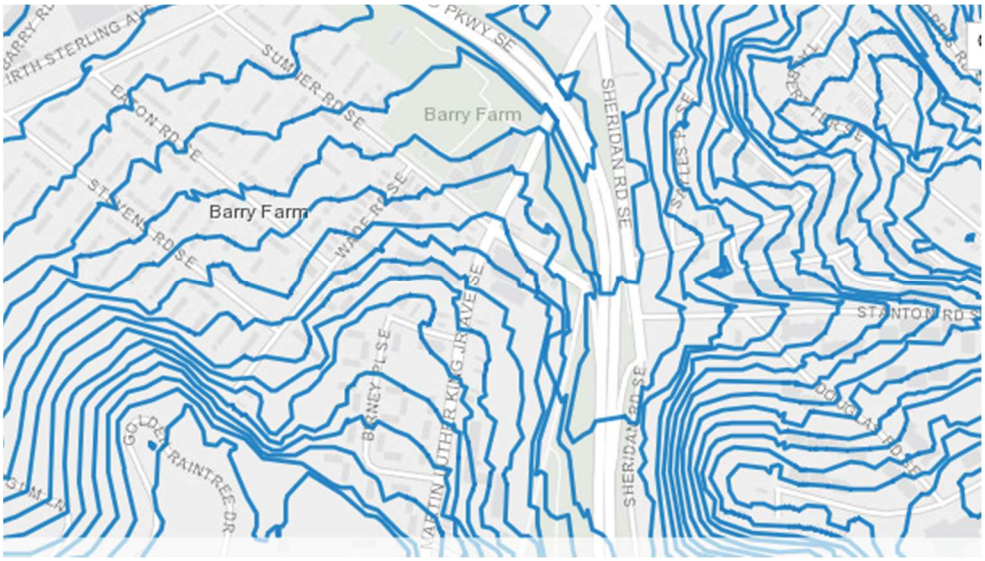
[101] St. Elizabeth's Hospital opened in 1855, one year after the construction of Uniontown. Years later, Dr. Charles Nichols reminisced about the opening ceremony "on a wooded ridge overlooking the city of Washington." See: Thomas Otto, *St. Elizabeth's Hospital: A History* (Washington, D.C.: United States General Services Administration, National Capital Region, 2013), 1. St. Elizabeth's was an in-patient psychiatric hospital.

[102] Frederick Gutheim, *Worthy of the Nation: The History of Planning for the National Capital* (Washington: Smithsonian Institution Press, 1977), 28.

runs along the base of the Wicomico-Sunderland escarpment, which once represented a prohibitive geological barrier to further development in the north.[103] At that point, the elevation increases drastically over the course of just a few yards.

A topographical map of Washington with Florida Avenue NW labeled in the middle of the image. The map contours represent ten-foot changes in elevation. Note how north of Florida Avenue the elevation increases dramatically. Map acquired from Open Data D.C., "Topography - 10 Foot Contours," https://opendata.dc.gov/datasets/topography-10-foot-contours (accessed January 11th, 2020).

To the west and north of the Anacostia and Potomac Rivers, respectively, the District of Columbia includes one dramatic change in elevation as the landscape declines from the large Appalachian escarpment to the tidal planes of downtown Washington. To the east of the rivers, however, the terrain is far more varied in elevation.



[103] Ibid., 19.

A map from the same source showing the location of the Barry Farms complex to the West and Sheridan Terrace towards the middle. Both complexes were adjacent to the former Stickfoot Creek, discussed in chapter two. The creek was paved over and replaced by Suitland Parkway, which curves through the middle of the map. Map acquired from Open Data D.C., "Topography - 10 Foot Contours," https://opendata.dc.gov/datasets/topography-10-foot-contours (accessed January 11th, 2020).

The large variance in elevations across the Anacostia and Potomac Rivers helps account for the relatively low level of development in eastern Washington until the mid-twentieth century. The natural landscape of that region rises and falls over the course of hundreds of small hills and valleys. Creeks begin from headwaters in the higher parts of the eastern region near the District of Columbia's border with Maryland and flow towards the Anacostia and Potomac Rivers, carving small ravines and gullies on their ways. Most of the eastern section of the city, before its rapid development in the mid-twentieth century, resembled rural Appalachia more than the flat, low-lying sections of Washington to the south of Florida Avenue or the slightly inclined and hilly sections of upper Northwest Washington.

In the mid-nineteenth century, some developers began to purchase tracts from the plantation owners who once held much of the land in the eastern part of the District of Columbia. The developers established communities like Uniontown, which became a whites-only commuter town for working-class residents.[104] Still, there was only sparse development in eastern Washington, D.C. during the nineteenth century. Rolling hills, ravines, and gullies hampered the extension of sanitary and transportation infrastructures into much of the east until the first decades of the twentieth century.

[104] Ibid.

Excerpt from a topographical map of Washington, D.C. from 1864. Uniontown is visible as the small network of streets adjacent to the Eastern Branch, a name for the Anacostia River which was in use predominantly before the twentieth century. Notice how the major roads conform to the landscape, running within the ravines, gullies, and depressions between the hills of Eastern Washington, D.C. Library of Congress, "Topographical map of the District of Columbia and adjacent areas in Virginia, showing fortifications," https://www.loc.gov/item/2005625089/ (accessed January 12th, 2020).

After the Civil War, Oliver O. Howard, a colonel in the Union Army who had served with distinction during the conflict, embarked on a new and radical experiment in democracy that would change the landscape dramatically. As detailed in chapter three, while serving as the head of the Freedmen's Bureau Colonel Howard purchased about 375 acres of an estate belonging to the Barry family. James Barry, the family patriarch, had died during the Civil War. In the aftermath, his heirs opted to sell parcels of their land to the federal government. Howard then leased the land to newly freed slaves. He allowed the renters to work their plots and pay off the price of the properties over the course of a year or two. Over the ensuing decades, the community grew into a smallholding black neighborhood nestled in the hills to the east of the Anacostia River. The black smallholders who built their farms on the Barry family plot built a new envirotechnial regime in eastern Washington, D.C. They rearranged the landscape in order to support small-scale farming and dairy production. The public housing complex built there in the early 1940s would be named for that community, even as it ushered in a dramatic change in both the demographics of the region as well as the degree of control that locals could exercise over their surroundings.

In the early 1910s, the Army Corps of Engineers embarked on an ambitious plan to reshape the Anacostia River. During that decade, the Corps began dredging operations to make the river navigable for larger ships further upstream. It deposited the dredged material on the riverbanks in order to dry the swamps and marshes that had long lined the banks. The dredging operation accomplished three goals. First, it helped to straighten and deepen the Anacostia, allowing for more river traffic in eastern Washington, D.C. Second, it eliminated the marshes and swamps that had served as breeding grounds for mosquitos, which at best were pests and at worst contributed to the spread of disease. Finally, by depositing silt along the riverbank, the Corps helped produce more real estate and parkland for the city.[105]

Concurrent to the Army Corps' activities, the Department of Health in Washington started to take an interest in the welfare of residents east of the river. For decades those residents had contended with sewage spilling from the more densely populated parts of Washington on the opposite bank. Health officials and Progressive reformers began to see residents of eastern Washington as innately conditioned to greater degrees of exposure to cholera and other health problems.[106] In fact, the sewer outflow from James Creek, close to the Navy Yard south of the Capital Building, shuttled sewage downstream to communities along the Anacostia and Potomac shores that were recreation and fishing spots for southeastern Washington's black residents, especially those in Barry Farms.[107]

In the early twentieth century, the eastern District of Columbia, along with sections of the central city along the riverbank, increasingly became regional sacrifice zones, as heavy industries and the federal government looked for spaces on which to

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[105] John R. Wennersten, *Anacostia: The Death and Life of an American River* (Baltimore: Chesapeake Book Company, 2008), 102-103.

[106] Ibid., 79-83. For a detailed historical treatment of the longstanding correlation of non-whiteness with dirtiness and insalubrity, see Carl Zimring, *Clean and White: A History of Environmental Racism in the United States* (New York: NYU Press, 2015).

[107] Wennersten, 89. Sewage treatment as a concept emerged much later than sanitary sewer infrastructures. The question of who should bear the responsibility for cleaning the water—upstream or downstream communities—was disputed in the political and public health arenas from the 1910s until the 1930s. See Melosi, *The Sanitary City* and Joel A. Tarr, *The Search for the Ultimate Sink: Urban Pollution in Historical Perspective* (Akron, OH: The University of Akron Press, 1996).

build noxious but necessary structures.[108] In 1906, about half of a mile to the south of the Kenilworth neighborhood, the Potomac Electric Power Company (PEPCO) opened a large, coal-fired power plant.[109] In the next year, the Firth Sterling Steel Company, which made casings for artillery shells, opened on the western edge of what would become the Barry Farm public housing complex. The company operated until the 1920s, when it was demolished to make way for an expansion of the Bolling Naval Air Base, situated on the banks of the Potomac.[110] In 1942, the Kenilworth Municipal Dump opened just to the east of the Kenilworth neighborhood, in upper northeast. The prevailing winds carried dust, ash, and smoke towards the rest of eastern Washington, D.C.[111]

In all of these cases, noxious industries and activities were built adjacent to low-income African American communities. New freeways and parkways, built as suburban developments proliferated in southern Prince George's County and sections of Maryland just over the District of Columbia border, wound throughout eastern Washington. These conduits would bring increased traffic and automotive exhaust near the Sheridan Terrace, and Kenilworth Courts complexes beginning in the 1940s and 1950s. The residents who were most affected by the location of noxious industries and facilities in eastern Washington, D.C. were African American homeowners. Since they had been relegated to the cheaper and less pleasant land along the rivers, they were in the path of most of the pollutants that spread from the landfills, power stations, and roadways. This was part of the cycle whereby black land became less valuable, in the eyes of developers, than white land, and so the city's planners and industries built where most African Americans made

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[108] The term "sacrifice zone" is used by environmental historians to describe, for the most part, low-income communities on the borders of manufacturing areas where "residents are exposed to disproportionately elevated levels of hazardous chemicals", often byproducts of local industrial activities. In its original, Cold War context, the term "National Sacrifice Zone" refers to a site that was polluted by the mining and processing of uranium as the United States worked to build its nuclear arsenal. The term has taken on a broader meaning since the 1990s, referring to low-income and minority communities on the borders of polluted sites. See Steve Lerner and Phil Brown, *Sacrifice Zones: The Front Lines of Toxic Chemical Exposure in the United States*, (Cambridge: The MIT Press, 2010), 2-3.

[109] PEPCO, Inc., "Decommissioning the Benning Road Power Plant Factsheet," *Benning Service Center* http://www.benningservicecenter.com/benning-power-plant-closure/factsheet.aspx (accessed April 21st, 2019).

[110] Mark Jenkins, "D.C. Preservation League Seeks Protected Status for Former Tire Factory," *The Washington Post*, January 6th, 2016.

[111] See Chapter One, pp.

their homes. In turn, whites viewed black communities as inherently unclean or unsanitary.

When the NCHA began to build housing complexes in eastern Washington, D.C., it encountered a landscape that was slowly becoming a dumpsite for the metropolitan region. There were some communities that remained isolated from these environmental developments—Lincoln Heights and Highland Dwellings were not located near noxious facilities—but African American residents in Barry Farms, Kenilworth Courts, and Sheridan Terrace faced increasing threats to their health and welfare as environmental burdens proliferated in the region. The NCHA concentrated more and more African Americans near those threats as it expanded its housing stock. Siting matters greatly in the environmental legacy of public housing in eastern Washington, D.C.; it maintained longstanding patterns of environmental racism and segregation in the region, but also amplified the consequences of that form of injustice by locating hundreds of families near dumps, highways, and other nuisances.

Surveying and Appraising: Two Approaches to Mapping the Landscape of Public Housing

Before work began at its projects, the NCHA sent out two different groups to assess the landscape and the extant infrastructures. Appraisers went onto the sites that the Authority was interested in purchasing and recorded information about the terrain, elevation, extant infrastructures, and condition of the properties there. Surveyors went into the field and created uniform plots that adhered to the general plan for the District of Columbia. They also mapped the existing roads, sidewalks, pipes, and wires, and helped plan for further extensions of those infrastructures. Of the two sources, the appraisers were able to capture a more comprehensive description of the NCHA's eventual properties. In their reports, the appraisers included details about the slope of the plots, the ruggedness of the terrain, the overall elevation of the NCHA's land, and features like creeks and ravines. Both the surveyors and the appraisers offered simplified depictions of the properties that the NCHA acquired. Since their work was a necessary prerequisite to construction, it helps to describe exactly what work the surveyors and appraisers performed.

From the founding of the District of Columbia until the 1950s, the District of Columbia Office of the Surveyor conducted all land surveys for the courts, private landowners, and both the metropolitan and federal governments. While the Office of the Surveyor was allowed to collect fees from private landowners for its services, it was ordered to perform services for the local and federal governments free of charge.[112] The city code did not allow private surveyors to conduct legitimate surveys for any District of Columbia properties.[113] Therefore, there was only one office tasked with surveying the entire District of Columbia for the courts, landowners, and developers. By the time that the NCHA began its efforts to remake large sections of eastern Washington, D.C., the Office of the Surveyor was overworked, underfunded, and extremely behind in conducting the many surveys requested throughout the year.

During the 1930s, workers flocked to Washington, D.C. to find a job in the expanding federal government. This incentivized developers to invest in real estate in the areas surrounding the densely populated downtown core of the city south of Florida Avenue as well as the less developed parts of the city to the north. The Office of the Surveyor bargained with lawmakers for additional funding in increasingly exasperated tones throughout the late-1930s and into the 1940s to respond to the developers' demands for surveys. In 1936, the Chief Surveyor, Edward A. Dent, voiced his concerns to Senator Elmer Thomas of Oklahoma about a potential budget reduction of $6240, equivalent to about $115,000 in 2020.[114] Dent claimed that the loss of funding would lead to the elimination of one field party. The field parties were responsible for conducting the surveys and consisted of an engineer who oversaw the operation, a transit man who operated the instrument, and two chainmen who would drive pegs and cut timber when

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[112] District of Columbia Code, 1940 edition, Volume I, Section 1-616 [25:443] (Washington, D.C.: Government Printing Office, 1940), 20.

[113] This is based on the testimony of Edward Dent, who served as the Chief Surveyor of the District of Columbia in the 1930s. In a 1938 hearing regarding appropriations for the District of Columbia, Dent was asked to compare his office's budget to that of other major cities. Dent replied that he had written to Detroit, Pittsburgh, Baltimore, Cleveland, New York, Boston, and Philadelphia, and none except Philadelphia maintained a municipal surveying office. All other cities relied on private engineers. The unusual cases of Philadelphia and Washington, D.C. was likely a product of the metropolitan governments' desire to maintain their cities' historic plans, which dated back to the eighteenth century. See House Subcommittee of the Committee on Appropriations, *District of Columbia Appropriation Bill for 1938*, 75th Cong., 1st sess., 1937, 158.

[114] House Subcommittee of the Committee on Appropriations, *District of Columbia Appropriation Bill for 1937*, 74th Cong., 2nd sess., 1936, 79.

necessary.[115] Dent claimed that even with five field parties working full time, the Office of the Surveyor was still two weeks behind in its work.[116] If Congress went forward with the proviso to reduce funding for surveying, Dent worried that it would "prevent the accomplishment of a large portion of the survey work for the District of Columbia and Federal Government."[117]

After Dent finished responding to Thomas's queries, Melvin Hazen spoke up to defend the Office of the Surveyor. Hazen had worked in the office in for several decades before becoming the President of the District of Columbia Board of Commissioners in 1933.[118] Hazen estimated that 75 percent of the surveyors' time was spend on local and federal government projects. This estimate made sense considering the expansion of federal agencies during the 1930s. At that point, Dent made one further comment on the scope of responsibilities for the Office of the Surveyor. He stated "we really do more than make surveys. It is really a city-planning office besides a surveying office."[119] Hazen concluded the hearing by saying that the proviso to reduce funding "would ruin the office, I assure you. It would ruin the office."[120] In the end, the Subcommittee decided to reduce funding by 500 dollars, equivalent to about 9,000 dollars in 2020.[121]

The fights over funding continued throughout the 1930s and into the 1940s. Throughout those years, the Office of the Surveyor struggled to retain staff members who often left for more lucrative jobs elsewhere in the federal government. In the 1938 appropriation hearings, Dent claimed that his office had lost six individuals, equivalent to one-and-a-half field parties. In response, Representative Ross Collins of Mississippi said "do not ask us for more money."[122] Instead, Collins hoped that Dent could use some of the new agencies established during the New Deal. He questioned the Chief Surveyor to

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[115] Ibid.
[116] Ibid.
[117] Ibid.
[118] Ibid.
[119] Ibid.
[120] Ibid.
[121] *District of Columbia Appropriation Bill for 1938*, Public Law 172, 75th Cong., 1st Sess. (June 29th, 1937), 3.
[122] House Subcommittee of the Committee on Appropriations, *District of Columbia Appropriation Bill for 1939*, 75th Cong., 3rd sess., 1938, 172.

see if his office had "any CCC or WPA workers," before finally asking "[y]ou have no alphabetical men at all?" Dent flatly replied, "[n]o."[123]

Dent, perhaps exasperated by the slow pace of surveying in the District of Columbia and Congressional intransigence, did not seek re-appointment to the position of Chief Surveyor. Francis F. Healy replaced him in 1941. Healy would soon learn about the frustrations of the appropriations procedure. In 1941, Healy requested an additional 5,000 dollars for his office. He justified his request in a statement that read, in part, "[t]he Surveyor's Office has found it extremely difficult to function efficiently on the current appropriation….The creation of many new Government agencies has placed a greatly increased burden on the office which it never contemplated that it should perform with the present office and field force."[124] In the five years that had passed since 1936, the Office of the Surveyor had gone from two weeks behind schedule to six weeks, and paid 61 workers out of 65 below the average wages for their government classification level.[125] The District of Columbia Board of Commissioners had received complaints from both builders and citizens about the slow pace of surveying. According to one surveyor, "[t]he people want to get their construction started and they cannot do a thing until we make the survey."[126] Yet, the situation continued to deteriorate. In 1944, the Office of the Surveyor was down to only three field parties, having lost two since the year before.[127] By 1945, Healy estimated that the work assigned to his office had increased by sixty percent over the preceding year.[128]

Between 1936 and 1945 there was consistently more work and less money for the Office of the Surveyor. The number of workers available decreased as they transferred to other, better-paid posts. These factors conspired to greatly delay surveying in the District of Columbia, which was a necessary first step in the planning process for any construction project. By District law, builders could not seek out private engineers to

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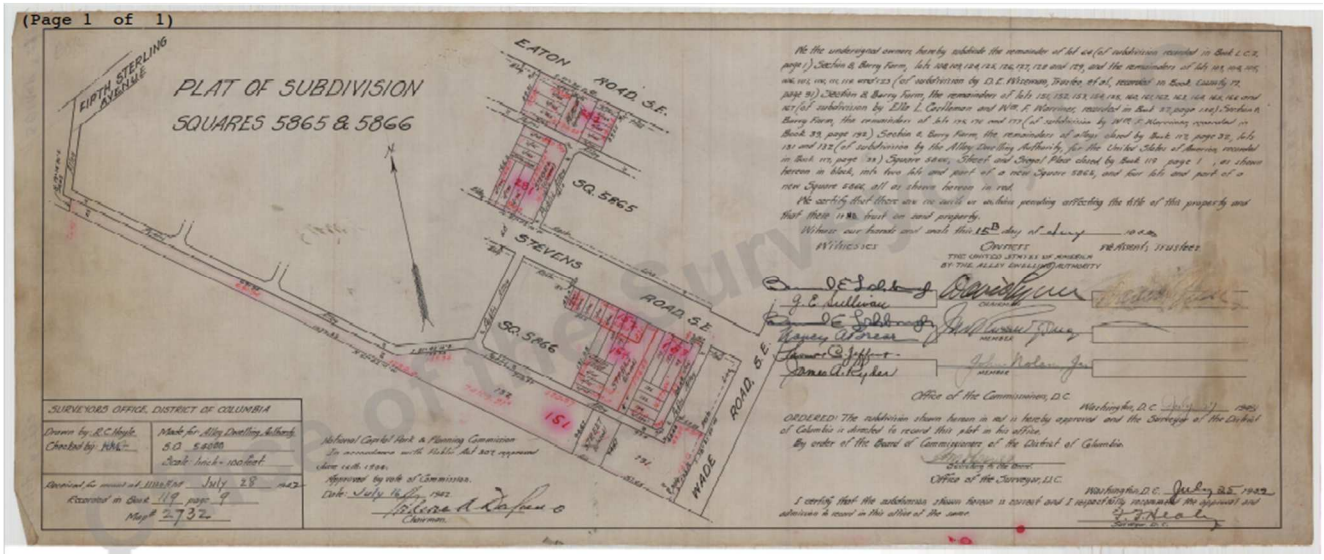
[123] Ibid.
[124] House Subcommittee of the Committee on Appropriations, *District of Columbia Appropriation Bill for 1942*, 77th Cong., 1st sess., 1941, 147.
[125] Ibid., 151.
[126] Ibid., 152.
[127] House Subcommittee of the Committee on Appropriations, *District of Columbia Appropriation Bill for 1944*, 78th Cong., 1st sess., 1944, 843.
[128] House Subcommittee of the Committee on Appropriations, *District of Columbia Appropriation Bill for 1946*, 79th Cong., 1st sess., 1945, 386.

survey properties. Hence, the problems in the Office of the Surveyor were bottlenecks in the building process. This must have proven frustrating for the executives in the National Capital Housing Authority, which began to acquire properties on which to expand its housing stock throughout eastern Washington, D.C. beginning in 1940. According to *The Washington Post*, between those years, the Alley Dwelling Authority was planning or in the process of building twenty-two new projects.[129] The Army, Navy, Public Building Authority, and the USHA, among other agencies, were also involved in erecting permanent and temporary housing during the first months of the Second World War. All together, there were fifty-four publically funded housing projects planned between 1941 and 1942.[130] If the Office of the Surveyor was solely dedicated to housing and used all five of its field parties for that purpose, and was able to operate in a timely manner, it would have taken a total of twenty-two weeks to survey every single site. The record shows, however, that the city's survey teams were overburdened with public, private, and court-issued demands for surveys. The Office of the Surveyor had to work quickly at each site in order to move through its backlog as efficiently as possible.

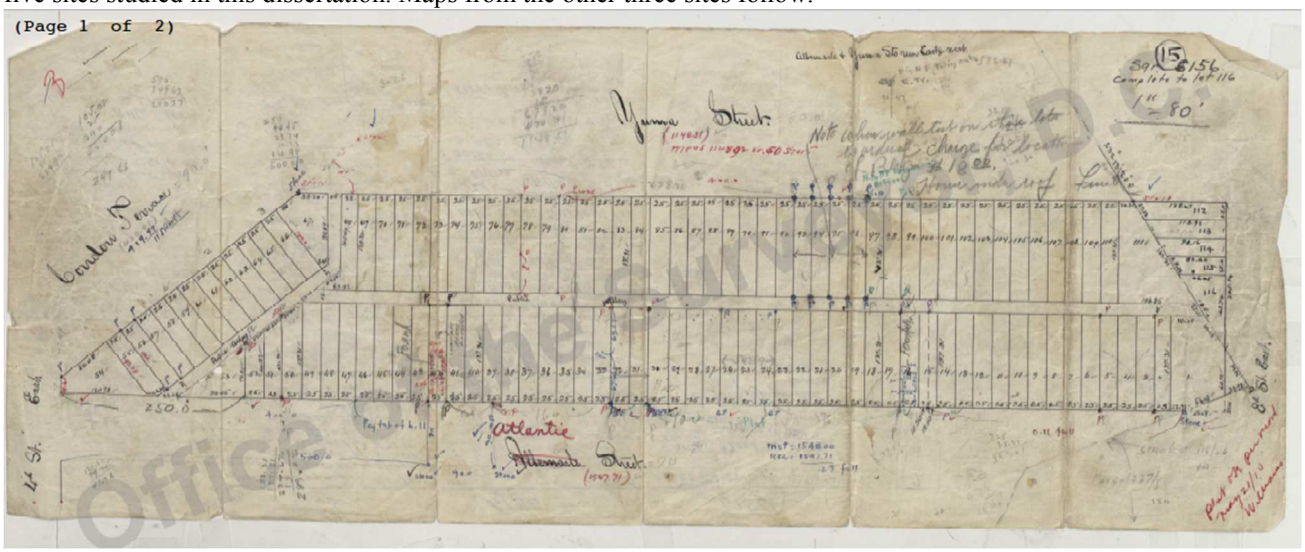
The Office of the Surveyor did produce plots and maps for the National Capital Housing Authority at all of its sites. Its maps guided the NCHA as it began the work of transforming the properties it acquired into modern residential blocks.



Plat for a square at the Barry Farms site. District of Columbia Property and Permit Center, Office of the Surveyor Land Record Management System, Squares 5865 and 5866, https://dcraonline-

[129] "Housing Developments in the Washington Area," *The Washington Post*, October 25th, 1942.
[130] Thirteen of these were east of the Anacostia and Potomac Rivers.

rms.dcra.dc.gov/SurDocsPublic/ (accessed March 6th, 2020). Nearly all of the historical surveys and maps from the historical activities of the Surveyor's Office have been uploaded to the SurDocs system, available online.[131] Some documents that have not been linked to individuals squares, as well as some that are listed alphabetically rather than by number have not yet been uploaded. Regardless, the author was able to find the digitized survey maps from the original mapping done for the NHCA when it purchased four out of the five sites studied in this dissertation. Maps from the other three sites follow.



Highland Dwellings. District of Columbia Property and Permit Center, Office of the Surveyor Land Record Management System, Square 5156, https://dcraonline-rms.dcra.dc.gov/SurDocsPublic/ (accessed March 6th, 2020)

[131] Neil Isenstein, e-mail message to the author, February 21st, 2020.

Kenilworth Courts. District of Columbia Property and Permit Center, Office of the Surveyor Land Record Management System, Square 5716, https://dcraonline-rms.dcra.dc.gov/SurDocsPublic/ (accessed March 6th, 2020).

Lincoln Heights. District of Columbia Property and Permit Center, Office of the Surveyor Land Record Management System, Square 5192, https://dcraonline-rms.dcra.dc.gov/SurDocsPublic/ (accessed March 6th, 2020).

The maps showed where pipes ran beneath the site, and the shape of the plots and squares that would be furnished to the Authority. The appraisers' reports, however, reveal slightly more about the features of the surrounding landscape. When the NCHA started planning the purchase of plots in eastern Washington, it reached out to local appraisers to conduct photographic surveys of the plots and to measure them.

Ravines and hills at the Highland Dwellings site in 1940 Hillside Dwellings, DC-1-13, December 16th, 1943; Folder "Site Approval Sheet Project D.C. 1-13," Box 5, Series: Land Acquisition Project Files USHA, DC-1-9 (Washington DC) to DC-1-16 (Washington, DC); RG 196, NARA II.

The appraisers also provided written reports about the conditions of the terrain and topography of the NCHA's properties. The reports are discussed in greater detail in the subsequent chapters, but it is important to highlight their role in assisting the NCHA's executives in making sense of the landscape of eastern Washington, D.C. At a time when the Authority's board was figuring out how to manage several projects simultaneously, the appraisers and surveyors were the individuals who traversed the area, left the roads that ran around the perimeter of the sites, and entered the woods. The appraisal reports and the Office of the Surveyor's publications provide important information about two things. First, these records captured the appearance and uses of the landscape of eastern Washington, D.C. prior to the NCHA's intervention. They also offered a preliminary depiction of how the NCHA wished to change the landscape. The Office of the Surveyor showed the NCHA neat and uniform squares that could help the Authority determine where to place its buildings. As some of the first ways that the NCHA engaged with and made sense of the landscape of the properties that it acquired, the reports and surveys are valuable sources.[132]

[132] The chapters on Barry Farms, Lincoln Heights, and Highland Dwellings all include analyses of the appraisers' reports.

Chapter Three

Early Attempts, First Obstacles: Barry Farms and the Construction of a New Envirotechnical Regime, 1867-1981

Between 1940 and 1943, the ADA constructed a new envirotechnical regime at Barry Farms. Although the Authority was interested in the economic function of the site, its leadership also recognized the need to support housing in conformity with the principles of decent, safe, and sanitary dwellings.[133] In order to fulfill its goals, the ADA needed to transform what had once been a smalholding agricultural community into a residential neighborhood. The Authority's plans would bring denser housing developments, new sewer and water pipes, electrical lines, and roads running along the boundaries of neatly plotted squares. In order to support such extensive modifications, as well as the construction of housing on the scale that the ADA envisioned, the Authority would first have to grade the area and remove trees in order to make way for new housing and infrastructures. In the end, the ADA built a new envirotechnical regime at the Barry Farms site. No longer oriented towards the needs of the smallholding African American farmers that once lived there, Barry Farms would instead serve the ADA's goal to provide and manage decent, safe, and sanitary housing.

Yet the construction of a new envirotechnical regime at the Barry Farms site brought with it a number of new envirotechnical obstacles that the ADA had not necessarily foreseen. The most prominent envirotechnical obstacle at Barry Farms was tied to siting. The ADA dramatically remade the landscape of Barry Farms as a means to support stable and sanitary housing, rather than the previous envirotechnical regime, which had served smallholding families and property owners. In grading and terracing the Barry Farms site, the ADA also laid the foundations for the later decline of its public housing program. The natural features of the new envirotechnical system—the land, elevation, soil, and hydrology—interacted poorly with the physical and technological changes to the area, such as leveling, terracing, and the infrastructures underneath and throughout the complex. During the early 1940s, the wartime construction process both revealed the presence of significant envirotechnical obstacles and undermined the ADA's

[133] National Capital Housing Authority, Report of the National Capital Housing Authority for the Ten-Year Period 1934-1944 (Washington, D.C.: GPO, 1944), 35-36.

ability to effectively respond to them. After the Second World War, budget tightening and the spread of diminishing resources for public housing across an expanding stock meant that the NCHA continued to leave envirotechnical obstacles at the Barry Farms site unaddressed. Ultimately, the problem of siting at the Barry Farms complex undermined the NCHA's pursuit of decent, safe, and sanitary housing. Residents of Barry Farms were left largely alone to contend with erosion, flooding, and polling water, which made for increasingly unpleasant and even dangerous conditions.

The Barry Farms area was home to different envirotechnical systems at different times. Part of the purpose of this chapter is to trace how different groups altered the Barry Farms site in order to create new envirotechnical systems. The most significant groups in this history were African American homeowners who desired self-sufficient communities, and the ADA, which wanted to build decent, safe, and sanitary housing. In altering the sites, the farmers and the planners confronted and responded to different environmental conditions that emerged as consequences of their actions.

As the ADA worked to overthrow the previous envirotechnical regime and replace it with new housing developments, it also made deeper connections between the Barry Farms site and the rest of the City of Washington. Planners and engineers had tried in vain over the course of the late-nineteenth and early twentieth centuries to provide new infrastructures that could deliver clean water and remove wastes from Barry Farms. The area's uneven topography and complex lines of ownership undermined those efforts. But after 1940, the ADA was empowered to remake large sections of eastern Washington, D.C., and it did so with a greatly expanded budget. It was capable of turning Barry Farms from a distinct and separate envirotechnical space into a connected part of the District of Columbia. The ADA contributed significantly to changes in the landscape of eastern Washington, D.C.

Public housing sites were not static places, but were instead envirotechnical systems that shaped and reshaped the landscape, necessitating responses from the ADA. As land subsided and eroded, or as water flooded and pooled, the ADA considered various possible courses of action. Often, though, it was unable to act given the political and economic forces that it faced at different times. Yet the ADA's interventions into the soil, terrain, trees, creeks, and ravines of the Barry Farms site left legacies of physical

changes that continued to undermine the structural stability of its complexes over the course of the 1950s and 1960s. The combined environmental, technological, and infrastructural changes at Barry Farms led to a new envirotechnical arrangement, in which "inextricably embedded environments and technologies…continually reshape[d] individual parts of the system and the whole."[134]

Ultimately, the ADA did not adequately address the envirotechnical obstacles that its envirotechnical system engendered. This placed a special burden on tenants of the Barry Farms complex. Living on almost thirty-three acres that were cordoned from the rest of the community by Suitland Parkway and the Anacostia Freeway, the 450 or so families in Barry Farms would be left to contend with the mounting deterioration and discomfort caused by the environmental obstacles at the site. By the 1960s, the breakdown of the NCHA's envirotechnical system was apparent to residents of Barry Farms and the press alike. Twenty years later, Barry Farms was easily one of the direst places to live in the District of Columbia. Environmental obstacles at the site rendered John Ihlder's vision for decent, safe, and sanitary housing unfulfilled.

Building Barry's Farm: Emerging Envirotechnical Systems Along the Anacostia, 1619-1790

Over the course of the past four hundred years, the landscape of Barry Farms had been host to several different envirotechnical regimes. First, the indigenous peoples of the Chesapeake Bay farmed and fished along the banks of the Anacostia and Potomac Rivers, which supported villages of a few hundred people. By the time that Europeans first explored the region, beginning during the first decade of the seventeenth century, the Nacotchank people predominated in the region. The Europeans supplanted the indigenous communities of the tidewater region during the seventeenth and early eighteenth centuries. With an eye towards commercial agriculture, they overthrew the envirotechical regime of the indigenous peoples. Instead, Europeans cleared the forests from large plots of land, and with enslaved laborers built tobacco plantations throughout the upper Chesapeake. The area that would become Barry Farms was one such plantation among many. The creeks, streams, and rivers of the region—as well as their eventual connection

[134] Sara Pritchard, *Confluence: The Nature of Technology and the Remaking of the Rhône* (Cambridge: Harvard University Press, 2011), 19-20.

to the Chesapeake Bay and the transatlantic trade routes—made the region desirable from the point of view of the plantation owners.[135]

Plantations proliferated throughout the Chesapeake region, including around the cities of Georgetown, Maryland and Alexandria, Virginia, which would become parts of the District of Columbia in 1790. It was fairly easy for enterprising voyagers from England to set up tobacco plantations. If there was an ample supply of fresh land and enough labor to care for the crops, tobacco could provide a quick and rewarding return on investment.[136] By 1695, improving economic conditions in England meant that fewer indentured servants were willing to try their luck in the colonies.[137] Seeking continued profits, plantation owners turned to the transatlantic slave trade. Removed from their homes and transported to a distant continent, the slaves were forced to work the plantations for their entire lives.[138] Those enslaved families built an envirotechnical regime overseen by white descendants of the original colonists, who themselves had displaced the indigenous peoples of the Anacostia and Potomac Rivers.

The envirotechnical system that emerged during the seventeenth and eighteenth centuries also featured significant envirotechnical obstacles. Tobacco is an exhaustive crop. It places significant demands on nutrients in places where it is planted, and renders that soil less viable for other crops long after it is removed. Hence, plantations consolidated and expanded over the course of the seventeenth and eighteenth centuries. By the start of the Civil War, most plantations consisted of several hundred acres, of which only a few dozen might be in cultivation at any given time. The Barry Plantation, part of which would become the site of the Barry Farms public housing complex, was about 350 acres, of which only twenty or thirty acres was in cultivation at any time.[139] For this reason, the enslaved laborers were often forced to cut down woodlands in order

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135 Brett Williams, "A River Runs Through Us," *American Anthropologist* 103, no. 2 (June, 2001), 411-415.
136 John R. Wennersten, *Anacostia: The Death and Life of an American River* (Baltimore: The Chesapeake Book Company, 2008), 20.
137 Ibid., 23.
138 Ibid., 21-23.
139 The size of the Barry Farm plot is a subject of some dispute. Conflicting figures come from the film "Portraits of Freedom: A History of Black Washington" (WUSA, 1991), Judith St. Pierre, "General O. O. Howard and Grant's Peace Policy" (PhD dissertation, University of North Carolina-Chapel Hill, 1990), and Eugene L. Meyer, "Neglected Black Historic Sites Recorded for Bicentennial," *The Washington Post, Times Herald*, April 14th, 1973. In the film, the narrator claims that the estate was 365 acres, while Meyer states that the estate was 375 acres and St. Pierre claims the tract was 325 acres.

to make way for new tobacco fields. This led to a great deal of deforestation in the hills above the Anacostia and Potomac Rivers.

In his monograph *Anacostia: The Death and Life of an American River*, historian John R. Wennersten describes the envirotechnical obstacles that emerged as the landscape around the Anacostia and Potomac Rivers was built to support tobacco production. First, with fewer trees to hold the soil along ridges and hills in place, flooding became a threat to communities closer to the riverfronts. Major floods occurred in 1724, 1738, and 1771, which destroyed dozens of buildings and ruined thousands of bundles of tobacco.[140] Envirotechnical obstacles that emerged from the transforming landscape disrupted the normal flow of commerce along the Anacostia and Potomac Rivers. Furthermore, because tobacco tends to loosen the soil, "[t]housands of tons of topsoil could be carried away in a single rainstorm."[141] Plantation owners had demanded that their slaves remake the landscape in order to support tobacco farming on a large scale. In turn, the landscape itself became unstable, threatening commercial activity along the riverfront.

Over the course of the eighteenth century, siltation rendered the upper reaches of the Anacostia River increasingly difficult for large ships to navigate. Once a mighty port town, Bladensburg, Maryland, was only inches deep at low tide by the end of the eighteenth century. Merchants and shippers looked further down river for new ports, which explains in part the rise of Georgetown, Maryland and Alexandria, Virginia.[142] Those two cities were incorporated into the new federal territory with the Residence Act of 1790.[143] George Washington, who originally proposed the location of the federal capital, wanted a city that was both the center of federal power and a strong commercial city in its own right; he believed that Alexandria and Georgetown could drive the development of the District of Columbia.[144]

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[140] Wennersten, 33-34.
[141] Ibid., 34.
[142] Ibid., 33-35.
[143] Frederick R. Gutheim, *Worthy of the Nation: The History of Planning for the National Capital* (Washington: Smithsonian Institution Press, 1977), 13.
[144] The District of Columbia no longer encompassed Alexandria and extended only to the southern bank of the Potomac River after Congress approved retrocession in 1846. See ibid., 333.

The development of the western and eastern portions of the District of Columbia proceeded unevenly. Pierre Charles L'Enfant, who Washington had selected to make the first plan of the city, focused on the western portion of the city, closer to the extant city of Georgetown. He quickly developed an appreciation of the area's "streams and marshes, its uncertain and fragile river edges, the few really commanding heights of land, the ridges and terraces, and the strategic importance of a few feet in elevation. These factors had already determined the drainage, roads, and stream crossings, the existing and prospective settlement, and the siting of many individual plantation houses."[145] Many of those few really commanding heights of land and ridges and terraces were located predominantly in the eastern portion of the territory, on the opposite side of the Anacostia from where L'Enfant made his initial survey.

Over the course of the seventeenth and eighteenth centuries, the plantation owners built an envirotechnical system that stretched across the tidewater region. The history of the Anacostia region shows how this large-scale transformation dramatically shaped local environments. The planters instructed their slaves to tear up hundreds of acres of forests on their many plantations and replace them with tobacco fields. In doing so, the planters created an unstable landscape. Seasonal rains brought thousands of pounds of topsoil cascading into the rivers and creeks, which over successive decades rendered them unsuitable for transportation. These envirotechnical obstacles—the unanticipated negative consequences of the operation of the system—influenced, in part the political and economic terrain of the region. Merchants moved closer to the large tidewater rivers as smaller streams and creeks struggled with silted shipping lanes. Washington, D.C. was similar in many ways to the other towns and cities surrounding it. Its position as the federal capital, however, would continue to distinguish its envirotechnical history from that of other localities during the nineteenth and twentieth centuries.

From Barry's Farm to Barry Farms: The Collapse of the Plantation System and the Rise of Black Smallholders in Eastern Washington, D.C., 1854-1920

During the next seventy years Washington grew into a medium-sized tidewater city. Unlike Baltimore, which was about forty miles to the north, the District of Columbia

[145] Ibid., 22.

never became a commercially significant city. For the most part, Washington consisted of government offices, the homes and offices of a few prominent businesspeople, and working-class communities diffused throughout the city. Parts of the District of Columbia that were located outside of the jurisdiction of the City of Washington were still largely inhabited by plantation owners, their families, and their slaves. Indeed, this was the case for most of northern and eastern Washington.

In the decades leading up to the Civil War, one significant community existed east of the Anacostia River. It was named Uniontown, for its builder, the Uniontown Development Corporation (UDC). Starting in 1854, the developers began advertising to white workers along the docks about the opportunities that Uniontown offered. The company touted the neighborhood's benefits, such as greater distance from the nuisances of the Navy Yard and a fairly short ride to work. Furthermore, Uniontown was not racially integrated. The UDC treated the greater proximity between white workers and black workers—who largely lived in homes close to the Navy Yard—as an advantage. Homeowners in Uniontown were unable to sell, rent, or lease property to anyone who was African American or "of African descent."[146] Polluting industries like soap making and butchering were also prohibited in the Uniontown development.[147]

The landscape surrounding Uniontown "remained swampy and wild, and the river subdivided itself into channels running between bush-covered islets and vast expanses of wild rice."[148] Southeast Washington along the Anacostia was mostly low-lying and marshy, unsuited for large-scale construction until engineers could make improvements in the grade and stability of the land. Retaining barriers and drainage efforts along the Anacostia riverfront were necessary before any sort of large-scale development could take place in the surrounding areas. The Barry Plantation was located to the southwest of Uniontown, in between low-lying areas that had been periodically submerged by the Anacostia, to the west, and the hillier lands to the east. Barry Farms remained fairly

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[146] Brett Williams, "A River Runs Through Us," *American Anthropologist* 103, no. 2 (June, 2001), 415.
[147] See Carl Zimring, *Clean and White: A History of Environmental Racism in the United States* (New York: New York University Press, 2015). African Americans and other nonwhite communities were generally built closer to nuisance industries in US cities during the nineteenth and twentieth centuries. See also: Ellen Stroud, "Dirt in the City: Urban Environmental History in the Mid-Atlantic," *Pennsylvania History: A Journal of Mid-Atlantic Studies* 79:4 (Fall 2012): 428-439.
[148] Williams, 415.

undeveloped until the mid-twentieth century in part because of these environmental conditions.

Public Domain Image of American Civil War Defenses of Washington, DC. US Government, Department of War. 1865. James Barry's Farm is visible south of Poplar Point. The estate stretched to the East, nestled between the two main roads on the southwest corner of the Uniontown development. The hills in the east are marked by hatches. St. Elizabeth's hospital sat on top of a ridgeline over the plantation. Creeks ran throughout the Barry estate into the Anacostia River. The red lines mark the routes of military highways.

The Civil War and its immediate aftermath brought significant environmental changes to the District of Columbia. Perhaps most significantly, the plantation system in the federal capital collapsed. President Abraham Lincoln signed legislation abolishing slavery in the District of Columbia on April 16th, 1862.[149] Prevailing for over two hundred years on the backs of thousands of enslaved people, the plantation system ended in a relatively brief moment. Furthermore, the Union Army's work to protect the city required extensive modifications to the landscape. Army personnel built a ring of earthen forts around the capital. As anthropologist Brett Williams writes, defensive construction projects also "demanded a massive deforestation, which stripped the hilly perimeter so

[149] *An Act for the Release of certain Persons held to Services or Labor in the District of Columbia*, 37th Cong., 2nd Sess., ch. 54, 12 Stat. 376 (April 16th, 1862).

lookouts could spot a Confederate approach."[150] This effort "hasten[ed] land erosion and fill[ed] the river with silt."[151] As plantation owners and merchants in the region had long known, deforestation was tied to shifting landscapes and unstable soil.

A more dramatic and lasting change would come in the immediate aftermath of the Civil War, as the federal government planned for the redistribution of the lands it had seized, purchased, or otherwise acquired during the conflict. With the plantation system in the tidewater region largely destroyed, some federal officials saw room for new approaches to land use in the highlands lining the Anacostia and Potomac Rivers. Colonel Oliver Otis (O. O.) Howard was one such individual. Howard redistributed the plantation to the former slaves who had toiled on behalf of the Barry planters. He hoped that the transformation of Barry Farm into a series of small family plots would provide the freedmen with income and some degree of economic independence from white landowners.[152]

In the aftermath of the Civil War, the District of Columbia continued to develop unevenly. The portion of the city to the west of the Anacostia River expanded. On the eastern side of the river, however, there were far more family farmers. They worked to transform the landscape in order to support their traditional livelihoods. Some neighborhoods in the higher elevations—and especially those close to the existing development of Uniontown—continued to grow. But much of eastern Washington was still rural and sparsely populated.

Between 1867 and 1940, the residents of sparsely populated Barry Farms worked to bring about a new envirotechnical landscape. Physically, they altered less of the environment than the plantation owners had. Their farms were not built to facilitate large-scale production, but were rather meant for household or at most local consumption. The size of the lots, as well as the hilly conditions of the land limited fully self-sufficient agricultural production among the African American farmers. Their farms provided "vegetables, chickens, and dairy products that were used for the families' consumption

[150] Williams, 415.
[151] Ibid.
[152] St. Pierre, 130.

and were also sold at the local market to help support the family."[153] Despite owning their own homes and lots, many residents sought work across the river, and used their land to supplement their diets and income.

The farmers' work represented an interregnum between two environmental regimes. The previous plantation system was physically exploitative and environmentally demanding. It relied on slave labor to remove trees and plant tobacco, resulting in soil instability, run-off, and siltation. After the Civil War, former slaves and their descendants built a regime of smallholding farms that taxed the land less than the plantations had. Still, rainfall frequently led to swelling creeks and streams throughout the region. Smoot, for example, reminisced about "the sudden storms of summer with its [sic] vivid lightening and heavy peals of thunder, bringing torrents of rain that swelled the peaceful stickfoot creek into a raging torrent."[154] These environmental features of eastern Washington did not seem to pose a significant envirotechnical obstacle to the Barry Farms community, which maintained its envirotechnical system for about seventy-five years. In the 1940s, the ADA would plan on a much larger scale, building a new envirotechnical system meant to support decent, safe, and sanitary housing. It would encounter significant envirotechnical obstacles as it pursued its goals.

The Emergence of a Local Housing Program: The ADA Builds a New Envirotechnical Regime, 1940-1943

Barry Farms was one of the ADA's first wartime projects. In some ways, it prefigured the problems that the Authority would encounter at sites across eastern Washington, D.C. While lightly populated, Barry Farms was also moderately forested. The era of clearing swaths of trees fell by the wayside after the destruction of the plantation system. The smallholding families of the region had little incentive to clear-cut the woods around their properties. Barry Farms was also rolling and rugged. Streams and creeks cut down slopes towards the Stickfoot and eventually the Anacostia River. Finally,

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153 "Oral History—Working Outline (and Some Script)," 1, Folder 1, Box 1; Neighborhood Background Research Files, 1898-1988; *Exhibition Records: Evolution of a Community*, M03-040; Smithsonian Anacostia Museum (hereafter SAM).

154 William E. Smoot. "Reflections and Impressions." Stickfoot Creek was covered during the construction of Suitland Parkway in the 1940s (see chapter eight). It once met the Anacostia River along the northern edge of what would become the Barry Farms complex.

although a sewer viaduct ran near the property selected for the Barry Farms complex, many of the homes therein were not connected to the main line. The ADA did not have its work cut out for it. The Authority would first have to strip the trees from the site, then level and grade it, then extend infrastructures while constructing hundreds of dwelling units.

The ADA made its first assessment of the landscape of Barry Farms in 1941. It hired an appraisal company to do an initial survey of the area and determine a fair price for the existing lots. As mentioned in the introduction, the ADA wished to build housing that was economically viable as well as up to the standards of decent, safe, and sanitary housing. The cost of acquiring land was part of the economic viability of a site. The ADA's efforts represented the first time that any agency of the District of Columbia tried to figure out the complex lines of ownership in the Barry Farms neighborhood, not to mention what the site actually looked like, through firsthand, on-the-ground reporting. While the courts might have revealed some information about land ownership in the community, the official documentation might have been far removed from how the local community actually practiced property management and inheritance.[155]

The 1941 appraisal of the Barry Farm tract provided the ADA with valuable information about the appearance of the landscape, giving the Authority the ability to estimate the scale of work to be done. The report includes information about how much of the land was sloped, the viability of portions of the site for large-scale construction projects, and the quality of the improvements made on the sites by owners over the past sixty years. While not as detailed as later appraisals, such as those conducted for Lincoln Heights and Highland Dwellings, the report does provide some crucial information. What

[155] In 2019, three articles in well-regarded magazines were published related to the complicated nature of some African American land inheritance in the American South. Lacking access to lawyers, or without the means to pay court fees, many black farmsteads were passed on through informal, community-based arrangements. Rather than protecting rights to the land, however, these arrangements could easily be challenged in court by individuals or organizations seeking to appropriate large tracts owned by African Americans. It is possible that informal arrangements also shaped land inheritance in the case of Barry Farms, which would explain the difficulty that the ADA, and the District of Columbia before it, faced in figuring out who owned what land. See Lizzie Presser, "Kicked Off the Land: Why So Many Black Families are Losing Their Property," *The New Yorker*, July 22nd, 2019; Van R. Newkirk II, "The Great Land Robbery," *The Atlantic*, September 2019; Michelle Chen, "Black Lands Matter: The Movement to Transform Heirs' Property Laws," *The Nation*, September 25th, 2019, https://www.thenation.com/article/heirs-property-reform/ (accessed January 23rd, 2020).

the Alley Dwelling Authority did learn was that out of a little more than 32.7 acres, a total of almost 1.7 acres was sloped enough to be noticed by the appraiser.

This figure does not seem like much, of course, since 1.7 acres constitutes only about 5.2% of the total area of the Barry Farm plot. Indeed, the Barry Farms plot was less sloped than other housing projects built during the Second World War, especially Highland Dwellings and Lincoln Heights. But topographical maps help clarify the picture at the site. The southern edge of the property was situated at the peak of a steep cliff, which declined sharply from the southeast to the northwest. It appears as though contractors unsuccessfully graded the southern edge of the property. From the southeast to the northwest, the property slopes at a gentler rate from about seventy-five feet above sea level to about twenty feet at the property's northwestern corner, nestled in between what are now the Anacostia Freeway and Suitland Parkway. The site as a whole clearly slopes towards the Anacostia.[156]

Correspondence between the Alley Dwelling Authority and the appraiser did not indicate that the land sloped downwards by about fifty feet from the southeast to the northwest. The Alley Dwelling Authority at least knew that there was severe sloping on 5.2% of the land; the appraiser indicated as such by writing that "approximately 33% of area is low and swampy, requiring 10 to 15' fill" for one plot and writing the single word "slopes" on the other uneven plots. The Alley Dwelling Authority's Board therefore knew that individual parcels were uneven, but did not necessarily know that the land was uneven across the entire surface area. Only the appraiser's report mentions the condition of the land. Even in that, there does not appear to be much attention on the appraiser's part to the average topography of the plot. With the property line beginning on the edge of a ravine and falling fifty feet over the course of three city blocks to the intersection of the Suitland Parkway and Anacostia Freeway, Barry Farm was clearly built on sloped land.

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[156] The appraiser's report does challenge the prevailing view of the nearby white residents that Barry Farm was a backwards, ramshackle neighborhood that had not witnessed significant improvement since the Civil War. In fact, of the nineteen homes located on the plot, twelve were rated as good or fair. Seven were rated as poor. Almost two-thirds of the homes in the Barry Farm plot, then, were rated as livable, at the very least. For the appraisal report, see "Book #1 Appraisals DC-1-9 Washington, DC.", Box 5, Series: Land Acquisition Project Files USHA, DC-1-9 (Washington DC) to DC-1-16 (Washington, DC), RG 196, NARA II.

Regardless of the ADA's understanding of the conditions of the landscape, the construction process at Barry Farms had to try to overcome the two envirotechnical obstacles of poor materials and siting. In his 1944 report to Congress, John Ihlder frankly reported on the ways that both the wartime economy and environmental factors complicated progress on the Barry Farms site. For one thing,

> Problems of substitute materials and equipment immediately arose, as suppliers insisted on ever-higher priority ratings. Hardware, plumbing fixtures, floor coverings, and numerous other items were affected. Gas ranges and hot water heaters had been omitted from the general contract, as these were to be secured through the USHA's mass purchase plan.[157]

Ihlder and the ADA were constrained by the wartime economy. As revealed below, these economic constraints impinged on the Authority's pursuit of decent, safe, and sanitary housing. Ihlder does not go into all of the details about material deficits at the site. However, it is reasonable to assume that the environmental forces at the Barry Farms site stressed those materials, producing an environmental obstacle that the ADA found difficult to redress after the buildings were constructed.

In the same report, Ihlder made Congress aware of the envirotechnical obstacle presented by the site itself. The sloped landscape, combined with seasonal rains, produced unanticipated problems for the contractors. Ihlder wrote that

> No sooner was one group of war-created problems cleared away than another emerged to halt the work and delay the opening of the houses. A temporary drainage system was installed to permit the contractor to proceed. Heavy rains in October not only stopped grading and the laying of sidewalks, so that some of the completed houses were isolated in deep mud; the rains also weakened a bank which formed a boundary of the property, and endangered the wall of St. Elizabeth's hospital, which stood on the crest of the bank. This hill had been cut back to provide additional houses at the instance of the USHA.

[157] National Capital Housing Authority, 58.

> An immediate engineering conference was called to determine the best means of holding the bank and to drain the slope in order to prevent a serious slide. This resulted in a separate contract for a series of concrete cribbing and drains.[158]

As had happened throughout the history of the Barry Farms site, the soil shifted as a consequence of heavy seasonal rains. This was not uncommon, but created several problems that the ADA struggled to address. They were linked to later instances of erosion and soil movement. Furthermore, the trees that had long anchored the soil in place had been removed to make way for complexes with abundant greenspace. The siting of Barry Farms itself gave rise to envirotechnical obstacles, as the environment interacted with the reshaped and less forested landscape.

The Alley Dwelling Authority did its best to respond to some of the rougher conditions on the Barry Farm site. For example, the plot that the appraiser described as "low and swampy" was sold to the War Department in 1944 because it was impossible to use for housing construction. The War Department ended up using the plot for the construction of the Suitland Parkway, which ran alongside the northern perimeter of Barry Farm.[159] Sheridan Terrace, which was built in the late-1950s, would also be located adjacent to Suitland Parkway.

During the construction phase, the ADA did not allow the District of Columbia to visit the site. The ADA was quite frank about being unable to follow the inspection process and complete the buildings at Barry Farm on time.[160] This was also the case for Lincoln Heights and Highland Dwellings. On occasion workers at the Barry Farm site would remark on the quality and types of materials used in the construction process, sometimes referring to the District building code. Homer Smith, the Technical Officer for the Barry Farms site, noted to the Chief Counsel for the ADA that the sheathing used for electrical wires used in the complex was not in accordance with the District code due to

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[158] Ibid.

[159] Letter from James Ring to Maj. Gen. U.S. Grant III, Chairman of the National Capital Parks and Planning Commission, June 22nd, 1944; Reading File, 4/1/44-6/30/44, NCHA Legal Division, Archives of the District of Columbia (hereafter ADC).

[160] William R. Simpson to A.J. Haskell, NCHA Chief of Finance and Accounts, "Release of Payment to Jeffress-Dyer, Inc., on the Barry Farms Contract," June 13th, 1944; Reading File, 4/1/44-6/30/44, NCHA Legal Division, Archives of the District of Columbia, ADC.

the deficit of proper building materials.[161] As mentioned in the introduction, the District of Columbia was responsible for ensuring that the materials and their arrangement within the complex was safe and representative of standard building practices. Furthermore, the District of Columbia was responsible for enduring that the land at Barry Farms was stable and the buildings were build in conformity with what was viable at the site. Due to pressure from the USHA, however, the ADA conducted its own internal monitoring of work at the site. As evidence above, it did find at least one occasion where the water and soil interacted on the modified landscape to complicate construction and erode slopes.

Work on Barry Farms was complete by the end of 1943. This meant that only about two years passed from the initial appraisal in 1941, the purchasing of properties in Barry Farm or their seizure via eminent domain, the planning and design process, and the end of construction work. For comparison, Kenilworth Courts took about five years from the planning phase to the end of construction activities. Lincoln Heights took about three years from the planning stage to its completion.

The history of construction at Barry Farms speaks most prominently to the first envirotechnical obstacle: the problem of siting. In order to build homes on the scale that both the ADA and USHA desired, the Alley Dwelling Authority would have to change the grading across parts of the land. Although the entire plot was built on a slope towards the Anacostia River, the most pressing concerns for the ADA were particular sections which required about 10 to 15 feet of fill to bring up to grade. During the construction process, the contractors noted in at least one instance that the land could erode significantly as a consequence of heavy rainfall. Still, the contractors accomplished much of what they were hired to do. In the end, the entire complex sloped towards the Anacostia River. Water naturally moved from the highest point towards the northeast of the complex towards the lower southwest portion. This would prove to be a problem later on, as it provided opportunities for flooding and pooling towards the low-lying sections of the complex. Without a significant number of trees to anchor the soil in place and capture water, the soil would continue to run off towards the Anacostia.

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[161] Homer Smith, Technical Officer to William R. Simpson, Jr., "Electrical Wiring Change, Barry Farms Dwellings, DC1-9," June 18th, 1943; Reading File, 2/18/1943-7/31/1943, NCHA Legal Division, Archives of the District of Columbia, ADC.

As far as the second envirotechnical obstacle of materials goes, Barry Farms suffered from a death of appropriate structural components and interior appliances. Eventually it would receive what it needed to fully open, but the war limited the availability of important items, which delayed production, according to Ihlder. Lincoln Heights is a stronger example of the second envirotechnical obstacle, which is covered extensively in the following chapter.

Barry Farms' placement on the periphery of downtown Washington and across the Anacostia River maintained the traditional pattern of segregation of African Americans in discrete places across the metropolitan region. Barry Farms had long been owned and worked by black families, but its population had been relatively small and diffuse. Through its efforts, the NCHA would provide housing for over four hundred families on the Barry Farms plot, which would dramatically increase the population in that neighborhood. Those residents were left isolated and alone, as the complex began to deteriorate in the 1950s. The complex therefore retained older patterns of black segregation and seclusion, but within a modern envirotechnical context where residents had little control over their surroundings.

Defending the Old Envirotechnical Regime: Residents Resist Displacement, 1943-1954

When it was completed in 1943, Barry Farms was one of the first large-scale public housing complexes built by the city's public housing authority.[162] It contained 432 units for families of various sizes and sprawled across almost 33 acres.[163] The complex was one of several public housing complexes constructed during the Second World War that was intended entirely for African American residents.

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[162] Department of Housing and Community Development, *The Barry Administration Reports to the People on Public Housing*, 69. The housing complexes completed before or during the same year as Barry Farm were the Carrollsburg Dwellings (1941), the Ellen Wilson Houses (1941), Fort Dupont (1940), Highland Dwellings (1943), James Creek Dwellings (1942), the Kelly Miller Apartments (1941), and Langston Terrace (1937). Other dwellings were built by the War Department, the United States Housing Authority, the Public Buildings Administration, and the Navy, although those homes were temporary and were expected to be shuttered and demolished at the cessation of hostilities.
[163] Ibid; "Book #1 Appraisals DC-1-9 Washington, DC.", Box 5, Series: Land Acquisition Project Files USHA, DC-1-9 (Washington DC) to DC-1-16 (Washington, DC), RG 196, NARA II.

Image of Barry Farms taken soon after it opened. Notice the terraces running behind the buildings, separating rows of homes by several vertical feet. From Library of Congress, Prints and Photographs Division, "Barry Farms Housing Development, Washington, D.C. Terrace section I," available at https://www.loc.gov/pictures/resource/gsc.5a19190/ (accessed February 25th, 2020).

Another image revealing the sloped landscape of Barry Farms. The homes were kept fairly level on individual terraces, while the streets sloped noticeably downhill towards the Anacostia River. While the

complex was not absent of trees, the site had far fewer in 1943, compared to 1940. From Library of Congress, Prints and Photographs Division, "Barry Farms Housing Development, Washington, D.C. Group among trees I," https://www.loc.gov/pictures/item/2018722793/resource/ (accessed February 25th, 2020).

As the NCHA continued to acquire land near the original Barry Farms complex, neighborhing residents expressed anxiety about their loss of control over the landscape. In 1948, covering the aftermath of the Barry Farm construction project, a reporter for the *Pittsburgh Courier*—a predominantly African American newspaper—profiled a man in Barry Farm whose land and home were threatened by an expansion of the Barry Farm project. "So I moved out here in 1943", he says, "[w]ith my own hands I built me a house. It's not much now, but I'm going to keep adding as I go along until I get what I want. Now the Government comes along and wants to take my land away and redevelop it!"[164] This apprehension over the changing regime of land use and land control in Barry Farm was also expressed in the way that the Barry Farms community received residents of the new complex. As more and more public housing residents were moved onto land that was farmland only recently, those residents' anxieties increased. John Dale, a resident of Barry Farm since the 1890s, reflected that "[p]articularly when they tore down all those houses down in Southwest we got a lot of those people they were bad people…their children were bad. They had been shoved into [the Barry Farms public housing complex]."[165] Local African American residents sometimes received the public housing complex poorly.

Longstanding residents of the Barry Farms community were well aware that they were losing control over their communities and their land as the NCHA continued its building program. Residents saw that the NCHA was intent on transforming their neighborhood from a rural and rustic semi-agricultural community to a densely developed residential space. Indeed, the NCHA was intent on overthrowing the older envirotechnical regime—controlled and managed by the residents themselves—for a new one under its administration. In the 1920s, residents of the Barry Farms community reminisced about streams rushing in the summer months and cattle being moved across fields. By the 1940s, that memory was tied to a landscape that no longer existed.

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[164] Quentin Barber, "Residents Fear Loss of Homes," *The Pittsburgh Courier—Washington Bureau*, March 6th, 1948.
[165] John Dale, Tape 2, Side A. Series 2 Oral History of Anacostia Project Files, 1970-1974, Exhibition Records: Evolution of a Community, M03-040, SAM. This was from a 1973 interview with John Dale.

Residents of Barry Farms saw that the NCHA was making environmental changes on a massive scale, and spoke out about their diminishing control of the area.

For the NCHA's planners, however, the transformation of Barry Farms was a necessary counterweight to the increasing pace of urban renewal following the Second World War. Public housing construction and urban renewal proceeded in tandem from 1952 until the 1970s. As older neighborhoods, usually referred to as slums by urban reformers, were knocked down and rebuilt, their populations were often shifted into public housing complexes in other neighborhoods. For example, from the 1950s until the 1970s, 6,000 families—about 23,000 individuals—across 560 acres were forced to move by the District of Columbia's Redevelopment Land Agency (RLA) in the Southwest Urban Renewal Area alone.[166] Of the displaced people, only about 1500 out of 5500 families were placed into public housing. Seventy seven percent of those residents were black and eighty percent were renters.[167] Whole city blocks were razed and alleys and tenements cleared as municipal reformers sought to build a new model community. Public housing complimented the work done downtown as the NCHA transformed swaths of eastern Washington, eliminating what it considered to be rural blight and replacing it with modern urban neighborhoods.

What was rural blight to the NCHA might have been a product of environmental constraints that residents of Barry Farms encountered. In the late-1940s, urban planners found that Barry Farms did not conform to the District street plan. They encountered a community built organically, by the residents, rather than coordinated through central planning offices downtown. According Frederick Gutheim, who wrote an extensive history of planning in the District of Columbia, "Barry Farms' street system…developed independently of any District plan [and] followed either the ridges or the valleys of the site. Housing was scattered (70 percent of the land was vacant), primitive, and primarily of wooden construction."[168] Gutheim's comment on the site reveals that the

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166 Francesca Russello Ammon, "Southwest Washington, Urban Renewal Area," *Historic American Building Survey* HABS No. DC-856 (Summer 2004), 2.

167 Department of Housing and Community Development, *The Barry Administration Reports to the People on Public Housing*, 13.

168 Ibid., 236-237. In fact, the Barry Farms neighborhood was not necessarily as primitive as the city agencies suggested. The appraisal report compiled by the NCHA listed 35% of the homes on the plot as poor, 25% as good, and 40% as fair. See "Book #1 Appraisals DC-1-9 Washington, DC."; Box 5,

envirotechnical regime that the private homeowners in Barry Farms had built was one that largely conformed to the topography and hydrology of the landscape. Barry Farms' post-Civil War development ran along the ridges and valleys of the area.

As urban renewal continued apace in the late-1940s and early 1950s, the periphery of the Barry Farms complex, which was still sparsely inhabited, came under increasing scrutiny from the NCHA and the NCPPC.[169] The agencies undertook a major study of the housing, environmental, social, and economic conditions of Barry Farms and a smaller, neighboring area named Marshall Heights in 1944, the year after Barry Farm public housing complex was completed. According to the study, "'[r]ural blight' was largely a function of the layout of the area, which was difficult to police and provide with other essential services."[170] By rural blight, the two agencies meant scattered homesteads, some of which were built on private roads and contained dilapidated structures. The solution that the NCPPC and the NCHA offered was to redevelop the neighborhood as a whole, in order to provide decent, safe, and sanitary housing for both local residents and families displaced by slum clearance activities across the river. Of course, this would require the eviction of the smallholding families that had long lived in both Marshall Heights and Barry Farms and the demolition of their homes.

Those smallholders rejected the redevelopment plans put forward by the two agencies. Instead of the wholesale demolition and reconstruction of their neighborhood, residents of Barry Farm and Marshall Heights wanted the appropriate public agencies to build and expand sewerage according to the existing street plan, which largely followed the many ravines and hillsides of the area. The NCPPC rejected this plan, however, concerned about that the scheme would "[obstruct] future development by strengthening the obsolete street pattern."[171] Although the RLA announced slum clearance plans for the area in 1946, public protest would delay action for several more years. With urban renewal and demolition taking place in parts of Northwest Washington, the need for

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Series: Land Acquisition Project Files USHA, DC-1-9 (Washington DC) to DC-1-16 (Washington, DC); RG 196, NARA II.

[169] Frederick Gutheim, *Worthy of the Nation: The History of Planning for the National Capital* (Washington, DC: The Smithsonian Institution, 1977), 313-314. The RLA was created after the Second World War and served as a coordinating agency for urban renewal within the District of Columbia.

[170] Gutheim., 237.

[171] Ibid.

public housing in other neighborhoods placed a great deal of pressure on the NCHA to move forward with construction plans.[172]

Locals' rejection of urban renewal plans around the periphery of the Barry Farms complex represented a stand against powerful redevelopment agencies. Barry Farms still had symbolic importance. It was a landscape built in the shadow of slavery and the exploitative plantation system. It also represented a rejection of the past hardships of slavery for idle masters. Smallholding farmers built Barry Farms over the course of seventy-five years. Suddenly, large agencies stepped in to assert their right to control and reorder the landscape.

Those agencies—the NCHA in particular—took a paternalistic approach to urban planning. Until 1952, John Ihlder remained in charge of the NCHA. He was steeped in Progressive Era notions about the relationship between blight, environmental decline, and the health of the city. He believed in environmental transformation on a large scale to prevent the deterioration of the city and the social, moral, and physical wellbeing of its citizens. Ihlder had also worked through the New Deal Era, which had invested great faith in the ability of experts—Ihlder among them—to bring forward positive changes in the landscape. Ihlder believed that he knew what was best for the local community.

Neighborhood resistance to the redevelopment plans continued through 1947. In January of 1948, the House Appropriations Committee rejected funds for the Redevelopment Land Agency's scheme to redevelop the area. Remarkably, this rejection was carried out with reference to the neighborhoods' activist groups and individuals. In this instance, African American homeowners and residents were able to push back on redevelopment and urban renewal programs. This was an aberration considering the power of urban renewal agencies and the popular support for slum clearance in the immediate post-Second World War period.[173]

Throughout the following month, the NCPPC and the NCHA regrouped, and attempted to craft a plan that would be able to pass the House Appropriations Committee. The agencies promised that residents of the Barry Farm neighborhood and the Marshall

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[172] Robert Bruskin, "3 Slum Areas Selected for Elimination," *The Washington Post*, December 5th, 1946.

[173] Robert Bruskin, "D. Funds Clear Slum Areas: House Committee Rejects Request after Objections by Negro Group," *The Washington Post*, January 31st, 1948.

Heights area would be rehoused first if redevelopment threatened their homes.[174] Three days after that announcement was made, on March 6th, 1948, the agencies made a new appeal for slum clearance funds for Southeast Washington, this time to a Senate Appropriations Slum Committee.[175] On March 12th, the Senate subcommittee provided $50,000 for slum clearance planning, but explicitly forbade appropriations for actual clearance activity.[176] This was a victory for the citizens' groups who had protested the redevelopment plan. In 1949, Congress passed a new housing act that explicitly forbade funding "for those projects that had been presented to and rejected by Congress[,]" which included the Barry Farm and Marshall Heights area plans drafted by the Redevelopment Land Agency and the National Capital Parks and Planning Commission.[177]

Against the trend for the time, residents' activism in the late-1940s was successful. Congress rejected the NCHA and NCPPC's plans to expand the stock of public housing in the Barry Farm neighborhood specifically because of residents' backlash. It is remarkable, in the history of urban development that a scattered, group of homeowners was able to resist the power of municipal agencies that had long worked to seize their land. It was also surprising considering the political power structure of the District of Columbia. Without local politicians to lean on or any representation at the federal level, it was often difficult for working-class or impoverished residents of the capital to be heard. The protestors around Marshall Heights and Barry Farms may have succeeded because they were private homeowners. In any case, their ability to successfully push back against the NCHA was anomalous in the case of such development schemes. Surrendering to the Redevelopment Land Agency, the National Capital Parks and Planning Commission, and the National Capital Housing Authority would have led to the loss of the community's control of the land in the neighborhood.

The question of building more public housing and further integrating Barry Farms into the municipal infrastructure systems and envirotechnical networks arose once again

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174 Dorthea Andrews, "Slum Plans Spelled out for 2 Areas in NE, SE: Present Residents in Barry Farms, Marshall Heights to be Housed First," *The Washington Post*, March 3rd, 1948.
175 "New Appeal is Made for Slum Funds: Opponents Heard; Senator Reed Says Pleas Should Go to House Committee," *The Washington Post*, March 6th, 1948.
176 "Slum Planning Gets $50,000 in Committee: Senators Rule Out Purchase of Land Until 1949," *The Washington Post*, March 12th, 1948.
177 Gutheim, 238.

in 1953, four years after the apparent victory on the part of the citizen activists. In that year, the metropolitan planning organizations began studying the Barry Farm area, a necessary legal prerequisite to slum clearance activities. The slum study was covered in the *Washington Times-Herald* on October 7th, 1953. That article points out that Barry Farms

> in general is topographically rugged, having a number of steep hills and ravines that complicate construction, to say nothing of an impracticable street layout that fails to blend with the highway pattern of the surrounding neighborhood. These complications have discouraged builders from developing Barry Farms. For that reason, the area is one of the few remaining large tracts of open land left within the city confines. In addition, Congress wrote into the Housing Act of 1949 a provision that blocks use of public redevelopment funds in both the Barry Farms and the Marshall Heights subdivisions."[178]

Clearly by 1953 Barry Farm remained a fairly underdeveloped part of Washington. The street layout remained much as it had for the previous century, running from house to house along the ridges and valleys of the Southeastern neighborhood. Although other neighborhoods around Barry Farms—and the public housing complex itself—had been integrated into the region's envirotechnical networks, Barry Farms remained somewhat separate.

The National Capital Housing Authority, the Redevelopment Land Agency, and the National Capital Parks and Planning Commission launched their last effort to fully redevelop Barry Farm and Marshall Heights after the organizations finished their study of the neighborhoods. In May of 1954, the Senate Banking and Currency Committee passed a bill that stripped away the language of the 1949 Housing Act, which had prevented development in Barry Farm and Marshall Heights. Eager to proceed with urban renewal projects in Southeast, John Seerles Jr., then the executive director of the Redevelopment Land Agency, stated "new plans for Barry Farm redevelopment would probably would be

[178] "Barry Farms Slum Study is Proposed," *The Washington Post and Times Herald,* October 7th, 1953.

drawn up if the Senate and House approve the change voted by the group."[179] Unfortunately for Seerles and the rest of the Redevelopment Land Agency, as well as the NCPPC and the NCHA, a joint House and Senate committee rejected the proposal to develop Barry Farm and Marshall Heights, and the plans were laid to rest in July of 1954.[180] This was the final victory for residents of Barry Farm and Marshall Heights.

These disputes between community activists and the urban planners and builders who lived on opposite sides of the Anacostia represent an important theme in the history of the Barry Farm site. The activists in Barry Farm and Marshall Heights fought to protect the envirotechnical regime that their forebears had built over the course of about seventy-five years. The anti-renewal activists on the periphery of Barry Farms fought for local control over their neighborhood; theu sought to maintain the structures and street layout that they had lived with for decades. Congress eventually allowed small homes built along ravines and gullies to remain for a time, despite the NCHA's desire to build large-scale public housing complexes. The activists at the Marshall Heights site were defending their homes, of course, but their dispute also represents the long fight between locals and experts from further afield. The NCHA and RLA hoped to take control of the land, water, and infrastructures of the smallholding community in Marshall Heights. Instead, residents fought back in Congressional hearings and the courts. Ultimately, the locals won.

Running Barry Farms: Daily Life on a Sensitive Site, 1954-1983

While these fights over the redevelopment and integration of Barry Farms and Marshall Heights continued, life went on in the Barry Farms public housing complex. Barry Farms was, in the first years after it opened, sometimes described as modern housing for the poor in the local press. Barry Farms was never selected as a model demonstration project but it was featured prominently in a 1954 *Washington Post and Times Herald* article. In this article, resident Gloria Young and her family describe their new Barry Farm home by stating that the "modest four rooms and bath unit at the Barry

[179] "Way Opened to Develop 2 D.C. Sites," *The Washington Post and Times Herald,* May 25th, 1954.
[180] "2 Redevelopment Plans Axed by Conferees," *The Washington Post and Times Herald,* July 10th, 1954.

Farms public housing project looked like a mansion[.]"[181] Indeed, the NCHA's properties were improvements over the dilapidated alley dwellings that most families moved from. The Young family had previously lived in a run-down home on L Street SE. While living there, the family had to endure "a tumbled-down row brick that has no plumbing or cooking facilities and gaping holes in the rear wall where windows should be."[182] "The L Street house[,]" the *Post and Times Herald* article continues, "had a room which was originally a kitchen. The floor, however, had rotted away and the Youngs had not used the room for years. Likewise, two of the remaining five rooms could not be used because of fallen plaster, leaky roof and no windows."[183] Barry Farms, on the other hand, offered four stable walls, new roofs and floors, and clean and healthful surroundings in what was then relatively underdeveloped Barry Farms.

At least, that was how the National Capital Housing Authority described its housing complexes. For the Authority, the projects were the means to bring poor residents up to meet the middle-class standards of cleanliness and decency. Yet, very early in its operating history, the Barry Farm complex faced environmental problems. Vermin were the most prominent sign of the deterioration of the Barry Farm community. In 1966, twenty-three years after the complex opened, the Senate Subcommittee on Business and Commerce held a series of hearings on the housing conditions in Barry Farms. The Subcommittee was predominantly interested in ensuring that landlords—including the National Capital Housing Authority—made appropriate repairs and that tenants of "insanitary" buildings were properly relocated.

One speaker from Barry Farm participated in the hearing. Louise Davis had lived in Barry Farm for ten years, since 1956, just two years after Gloria Young remarked on the improved living spaces offered by the Barry Farm complex. Davis attended the hearings to voice two concerns. As she put it to the subcommittee, "No. 1 is rats….[m]y son was sitting outside on the morning of June 6, when a big rat came out of the vent that leads into the basement or storeroom that is in the exclusive control of the NCHA."[184] Davis goes on to state "[t]he people of Barry Farms are still without their screen doors.

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[181] "NCHA Home is 'Miracle' to Girl, 15," *The Washington Post and Times Herald*, August 19th, 1954.
[182] Ibid.
[183] Ibid.
[184] United States Senate, Subcommittee on Business and Commerce, *Housing in the District of Columbia*, 89th Congress, 2nd Session, June 28th-29th; July 19th-21st, August 3rd-4th, 1966, 280.

Over one-third of the tenants of Barry Farms have holes in their walls and ceilings or some other bad holes that need repairing; if not, a rathole, because I know that one-third of the homes in Barry Farms has ratholes. My neighbor was told to put putty on her ceilings so that it would stop failing."[185] Davis then asks the subcommittee "[w]hy can't we have decent, safe, and sanitary housing, too?"[186]

Davis's testimonial points to the fairly rapid decline of Barry Farm. Over the course of about a decade, the project went from being recognized in the press as a modern low-income housing development to an unsafe and unsanitary place to live. Stuck with a dearth of critical materials and pressure from the FPHA to follow a rapid production schedule, the contractors hired to build Barry Farm worked to meet their deadline, imperiling the promise of decent, safe, and sanitary housing from the very start. Improvements in basic infrastructures could not, according to the tenants of Barry Farm, make up for the structural unsoundness of the project itself. Although they did not describe it in these terms, residents of Barry Farms were aware of the envirotechnical obstacles of poor siting—which was itself a product of the NCHA's transformation of the landscape—and poor materials. These two physical problems were exacerbated by the shifting soils and rainfall within the envirotechnical system, which undermined the complex's stability.

The National Capital Housing Authority connected the Barry Farms community to the District of Columbia's water supply. The pipes that it built integrated the rental units into an envirotechnical network that spanned the metropolitan region. Water flowed from reservoirs in and around the city, through mains and into smaller pipes, eventually reaching residents who perhaps had lived most of their lives relying on community pumps outside of their homes and yards. But very basic material problems undermined the routine flow of water through the system. Poor quality materials—the only ones available during the war—frequently broke down. Sinks stopped up, and uncontained water spilled from broken pipes and joints. Then, a cascade of negative environmental and material consequences followed. Plaster crumbled and corroded once it became oversaturated, and rats found new holes and spaces through which to threaten the renters.

[185] Ibid.
[186] Ibid., 281.

Shifting soils and heavy rainfalls outside stressed the exterior of the complex's buildings. Decent safe, and sanitary housing required an envirotechnical system that kept water contained and surfaces dry. Once one element fell apart, other materials did too, creating unhealthy and unsafe living spaces for public housing residents.

The tenant grievance document goes on to discuss the structural conditions of the housing:

> The plumbing at Barry Farms is now being replaced with copper piping. Heretofore, the wartime plumbing was continually breaking down. And because it was laid out sequentially, when one sink got stopped up, so too did the adjoining neighbors' sinks. Incidentally, NCHA has levied repair charges on all the tenants thus plagued with antiquated plumbing including the "innocent" neighbors, and this has occurred not only at Barry Farms. The old plaster hasn't stood up, particularly under the attack of leaking plumbing in second-floor bathrooms. There are many holes in Barry Farms' walls and ceilings, some having been complained of for months, even years. One woman with a broken upstairs toilet had to try to cook for weeks on a stove that was below the dripping wastes. The stench was sickening.[187]

Although the NHCA received a greatly enhanced budget just prior to the Second World War, it came with the caveat that it would build housing quickly and on a large scale. The USHA breathed down the neck of John Ihlder and the NCHA's leadership, insisting that projects be completed at a rapid clip. These were bureaucratic and economic problems that complicated the NCHA's ability to build decent, safe, and sanitary dwellings. The poor materials interacted with the hastily transformed site to produce substandard housing. The envirotechnical system did not operate as Ihlder and the NCHA intended. Hence, projects like Barry Farm deteriorated quickly over the course of just a few decades.

The rats and decaying plaster remained dangerous hazards for Barry Farms residents through the mid-1960s. In 1966, the "Band of Angels," a citizen activist organization based in Barry Farms staged a demonstration and protest over poor housing

[187] Ibid., 283.

conditions. The activists were primarily concerned that they were not being consulted about the proper use of $300,000 earmarked for housing improvement by the NCHA's executive director Walter Washington. Lillian Wright, the chair of the Band of Angels, stated in *The Washington Post* that "[s]ince we live here we are best qualified to advise Mr. Washington on how the funds should be spent in the best interests of our community[.]"[188] Wright argued against the longstanding practice of issuing housing policy—including decisions about where to build homes—from the executive offices of the NCHA.

The Band of Angles highlighted several problems within the Barry Farms complex. Most of their concerns had to do with the structural integrity of the complex. According to resident Mary Taylor, "I had a pipe burst in my ceiling and about a 6-foot area of plaster fell on my baby and another child."[189] In another instance, Elizabeth Reid "reported that rats had eaten away the clothes in a neighbor's bureau and a portion of the doors of a closet."[190] The interrelationship between nature and artifice is apparent in both of these examples. Rats, undomesticated and dangerous, scuttled through the apartments—perhaps aided by cracks in the walls, floors, and ceilings produced by broken pipes—destroying property and the structure itself. Water flowed uncontained from leaking pipes, which contributed to decaying plaster. The materials used in the construction of Barry Farms, along with their arrangement, deteriorated some units within the complex.

Apart from vermin, structural problems also proliferated at the Barry Farm complex through the 1970s and 1980s. Due to the flow of rainwater, the poor quality of piping, and the state of dereliction in and around Barry Farm, by the late 1970s the gas supply became unreliable. In 1976, the Barry Farm housing complex lost all gas for heating. In response, the District of Columbia initiated a nine-year program to improve the complex's utilities. The city government was only partially successful. In October of that year, heavy rains seeped into the thirty-six year old pipelines, which cut off service

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[188] "'Angels' from Barry Farms War on Public Housing Units," *The Washington Post, Times Herald*, February 27th, 1966.
[189] Ibid.
[190] Ibid.

to residents.[191] Earl Biggs, who was then the manager of the Barry Farm complex for the National Capital Housing Authority, had claimed that for months that whenever it rained the pressure in the pipes would drop.[192] The spokesperson for the gas company stated that "the rains and the valley in which the project is located caused water to seep into the pipes during the weekend."[193] The hydrology and geology interacted with the aging infrastructure of Barry Farm to render housing inhospitable to residents. A gas leak in June of 1979 led the city to begin repairing the gas lines, but this project left residents without gas for cooking or heating water for nearly two weeks, much to their irritation.[194]

In 1981, the *Washington Post* profiled Jasper Burnette, the beleaguered acting manager of the Barry Farm public housing complex. Burnette would later go on to serve as the interim head of the NCHA after it had been renamed the Department of Public and Assisted Housing. In the early 1980s, however, Burnette was faced with the difficult task of improving the increasingly decrepit Barry Farm complex. The reporter describes the conditions of Barry Farm by writing that "[i]nside the apartments there are gaping holes in walls and ceilings; flaky plaster, rusting gutters; wheezing refrigerators and run-down gas ranges need to be replaced; floors need repair; stopped-up sinks and toilets need unstopping; and grubby grass needs cutting."[195]

According to Burnette, the hydrology and topography of the area surrounding Barry Farm complicated structural problems and exacerbated stress on the building. He stated that "there's a lot of flooding; water bangs up against the buildings and the structures begin to sink and rot[.]"[196] The site clearly deteriorated quickly, in large part due to the environmental pressures of the area. Poor maintenance is only one part of this story, however. The landscape surrounding Barry Farms, and the materials used in its construction, interacted poorly with other environmental features of the envirotechnical system. The NCHA was under pressure to build housing quickly, and it did, but in doing so recognized the difficulties of modifying the terrain and building housing in a large

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[191] Richard E. Price and Juan Williams, "Water Gets in Line, Barry Farms Loses all Gas for Heating," *The Washington Post*, October 14th, 1976.
[192] Ibid.
[193] Ibid.
[194] Edward D. Sargent, "Water, Meals at Project Cold: Barry Farms Residents in Southeast Without Gas Two Weeks," *The Washington Post*, July 4th, 1979.
[195] Edward D. Sargent, "Running Barry Farms," *The Washington Post*, June 25th, 1981.
[196] Ibid.

scale. Ultimately, the envirotechnical obstacles within the larger system led the Authority to very limited success in achieving decent, safe, and sanitary housing.

In *The Washington Post* article that profiled Burnette, resident Phyllis Best stated "[e]verything is connected. When one thing goes everything else goes too. First it's the sinks, then the toilets. They leak onto the floors and walls. We've got holes in the walls and we got mice too."[197] Best understood that public housing was integrated into a larger envirotechnical system that included not just the managers of public housing making decisions about the landscape and the provision of basic environmental amenities like clean water and gas for heating, but also landscape itself. The soil, hydrology, and even weather patterns of the Barry Farms location placed a great deal of stress on the complex. Ultimately, the economic situation of the NCHA rendered it unfit to fix those stresses.

Conclusion: Barry Farms, Siting, and the History of Envirotechnical Regimes

The ADA built a new envirotechnical regime at the Barry Farms site. The region had previously been modified by older envirotechnical regimes, including that of the planters, who deforested the landscape in the pursuit of a profitable crop. After the planters left their mark on the landscape, the Barry Farms area was handed over to families that had formerly been enslaved laborers. They built communities that ran along the ravines and hills of the region. The ADA intervened to overthrow that regime, which had been built over the course of decades. Within two years, the ADA constructed a new envirotechnical regime.

The ADA's plans for Barry Farms called for significant modifications to the existing landscape. This was necessary for two reasons. First, the guiding Progressive ideology of the ADA's planners meant that public housing should resemble middle-class neighborhoods. This was a crucial component of the moral environmentalism of reformers like John Ihlder. Thus, Barry Farms would consist of several two-story rowhouses with plenty of greenspace. Second, the USHA pressured the ADA to build housing on a scale that could accommodate the defense workers moving into the District of Columbia. These forces encouraged the ADA to undertake significant modifications to the landscape, including tree removal and re-grading. Some of those modifications gave

[197] Ibid.

rise to environmental obstacles that the Authority could not adequately confront. This undermined the ADA's pursuit of decent, safe, and sanitary dwellings.

By building public housing and extending sewerage, clean water, and gas lines into Barry Farm during the 1940s, the City of Washington began to take charge of the envirotechnical landscape of the neighborhood. Ultimately, the NCHA successfully integrated the Barry Farms complex into regional envirotechnical networks while leaving residents of the complex segregated from the local community. Residents of the Barry Farms public housing complex became dependent on the infrastructures that could make their homes decent, safe, and sanitary, until they began to break down in the 1960s.

Surprisingly, some residents near the Barry Farms complex successfully resisted the incursion of political forces from across the river well into the 1950s, even though the NCHA, and NCPPC had sought to redevelop the area since the 1940s. This bucked the trend of powerful urban renewal agencies ignoring local dissent as they remade the landscape. Heavy rains and slanted grounds contributed to the sinking and warping of walls, floors, and roofs. The initial decay of the Barry Farms structure also undermined residents' ability to secure decent, safe, and sanitary housing under the auspices of the National Capital Housing Authority.

In addition to the physical decline of Barry Farms, which negatively affected some of the residents at the complex, the NCHA also maintained patterns of racial segregation and environmental racism that had persisted in the District of Columbia since even before its founding. African American families, once living in cramped and dirty alley dwellings, aspired to modern housing through the NCHA's projects. Instead, hundreds of families found that their units or those of their neighbors or friends deteriorated as the prevailing envirotechnical system gave rise to significant obstacles to decent, safe, and sanitary dwellings. Before the NCHA's work, Barry Farms was a product of racial segregation. The NCHA amplified the environmental burden on African American communities in Barry Farms by moving hundreds of black families onto an unstable and flood prone site.

Chapter Four

Shifting Soils, Uneven Terrains, Poor Materials: The NCHA Confronts Environmental and Economic Pressures at Lincoln Heights

The interactions between the materials used to build public housing complexes and the terrain, hydrology, soil mechanics, and seasonality at the sites that the ADA selected led to the emergence of significant envirotechnical obstacles. Those obstacles hampered the ADA's efforts to provide decent, safe, and sanitary housing. The history of Lincoln Heights shows how the materials that the ADA relied on to build its complexes were faulty components within the larger envirotechnical system. As the ADA worked to build a new hybridized space at the Lincoln Heights site, it found that the natural processes at work there—soil movement, the flow of water, the heavy seasonal rainfalls—interacted poorly with the manufactured components of public housing. Thus, like Barry Farms, Lincoln Heights quickly deteriorated, even though at first it resembled the vision that planners like John Ihlder had for decent, safe, and sanitary housing.

The materials that the ADA used were far from optimal. They were selected because the conditions of the Second World War reduced the availability of better building supplies. As the United States' participation in the conflict geared up during 1942 and 1943, the ADA was forced to compete with other domestic agencies that were desperate for timber, steel, aluminum, copper, and other such components of structurally sound homes. Despite its requests, the ADA often lost the fight for such materials.

The environment enters into this history as another force that undermined the ADA's pursuit of decent, safe, and sanitary housing. Without optimal materials available, the environment placed a great deal of stress on the Lincoln Heights complex. Any envirotechnical system is dynamic. It reshapes itself as nature and artifice mingle and act together in both anticipated and unanticipated ways. In moments when the envirotechnical system acted in ways that the ADA did not intend—for example, when heavy rains corroded the roofing materials used at the site—the ADA chose how best to respond. But because the envirotechnical system at Lincoln Heights was shaped in part by the ADA, institutional politics and the economic situation of the early 1940s also played roles in shaping the range of possible responses that the ADA could make. Ultimately, the ADA was unable to do much to stem the envirotechnical obstacles that

emerged from the interactions between materials and the environment of Lincoln Heights.

This chapter will examine the construction of Lincoln Heights, tying the problems of land subsidence, crumbling foundations, and other structural issues that emerged in the late 1950s and early 1960s to the nature of the site on which the complex was located. The envirotechnical history of Lincoln Heights was similar to that of Barry Farms. The two sites were hilly and moderately forested. Both had long been home to smallholding black farmers. In both cases, the ADA demolished the homes that once stood on the sites and replaced them with large complexes consisting of two-story, semi-detached homes. The final product of the ADA's work, in both instances, was a modern residential neighborhood that was connected to the regional infrastructures considered to be vital to modern dwellings. Yet Lincoln Heights reveals far more about the second envirotechnical obstacle that ADA planners faced. The materials used to build Lincoln Heights did not adequately support the operation of the envirotechnical system. In the case of Lincoln Heights, the stress that the environmental components of the envirotechnical system exerted on the manufactured components contributed significantly to the ADA's failure to provide decent, safe, and sanitary dwellings.

The case of Lincoln Heights reveals much about what ADA planners knew about the qualities and characteristics of the spaces in which public housing complexes were being built and how they acted on that knowledge. The ADA left behind far more correspondence between contractors, site superintendents, and the Authority's leadership, than had been generated at Barry Farms and the history of Lincoln Heights reveals how the ADA responded to the envirotechnical obstacles of the site. Even when the ADA's contractors made the Authority's leaders aware of the situation on the ground, the ADA was unable to pivot towards better construction methods. This left more space for the environmental features of the site to undermine the manufactured features. Ultimately, the ADA did little to rectify those environmental obstacles during the Second World War and after. This meant that residents were left to suffer increasingly dire housing circumstances as the environment continued to place a great deal of stress upon the complex in the 1950s and 1960s. Lincoln Heights demonstrates that the institutional and

economic constraints on the NCHA would severely undermine the war projects' achievement of decent, safe, and sanitary dwellings.

Setting the Stage: The Environmental Features of Lincoln Heights

Lincoln Heights is located in a particularly hilly section of Washington, DC. From the central road that cuts north to south across the complex to 51st street, which runs north to south along the eastern side of Lincoln Heights, the elevation drops precipitously from about 145 feet to about 90 feet over the span of just about 100 yards, creating a grade of about eleven percent between the center of the complex and the right-of-way at 51st Street NE.

The western side of Lincoln Heights slopes downward from 145 feet to a little more than 100 feet. The neighborhood as a whole was built on a series of hills that ran through the site from north to south, sloping towards the east and west on either side. An urban creek named Watts Branch runs across the northern border of the Lincoln Heights neighborhood. At that point, the land slopes sharply towards the creek, which sits at an average elevation of forty feet above sea level.[198] Across the creek the changes in elevation from block to block are much more gradual. Compared to some of the neighborhoods surrounding it, Lincoln Heights is particularly hilly, which accounts for its relatively low degree of development until after the Second World War.[199]

In 1941, twenty-two homes stood on the Lincoln Heights site. Many had been in the possession of smallholding farmers and their descendants since the end of the Civil War. Locals referred to the community as Lincolnville, which was reflected in the name given to the eventual public housing complex. Most of the residents of Lincolnville were former slaves and their descendants. Their homes consisted of one-and-one-half acre tracts, where homeowners farmed small plots to supplement their incomes and diets.

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[198] As noted above, Watts Branch declines in elevation until it reaches sea level, at its intersection with the Anacostia River.

[199] The streets just to the north and northeast of Lincoln Heights in figure two appear to follow the valley between two hillsides. This is unusual for the City of Washington, which had adhered to a grid system since the early 1790s. For more on the grid system of Washington, see Frederick Gutheim, *Worthy of the Nation: The History of Planning for the National Capital* (Washington, DC: Smithsonian Institution Press, 1977), 24-36.

Farmers in the area produced meat, poultry, dairy products, and vegetables.[200] Before the Second World War, the surrounding neighborhood was much like Barry Farms. It was sparsely populated, with a few homes lining the ridges and streams of the area. The roads that existed on the plot conformed to the local landscape, connecting scattered farms to the main streets. Most of the homes also relied on external water supplies, usually from wells located on the properties and lacked indoor sewage.[201]

The site had access to plenty of fresh water but was far from the Anacostia River, which became polluted and silted throughout the nineteenth and twentieth-centuries. Watts Branch, which flows from Prince George's County, Maryland, to the east, into the Anacostia River near the Kenilworth Courts housing complex once ran freely through the agricultural landscape.[202] Today, however, after the work of the NCPPC, NPS, and NCHA, Watts Branch runs through a culvert just to the north of Lincoln Heights. This was a consequence of the ADA's desire to transform the small agricultural community into a residential neighborhood connected to the rest of the city. The potential flood hazard from Watts Branch threatened future construction around Lincoln Heights if it had not been properly contained. The channelized Watts Branch runs for about 550 yards through this culvert, over which several detached homes and streets were built in the 1950s and 1960s. Urban renewal agencies within the District of Columbia made modifications to the landscape to support large-scale construction.

The hydrological history of Watts Branch helps contextualize the problems associated with periodic flooding in the area surrounding the eventual site of the Lincoln Heights complex. The stream drains part of central Prince George's County and much of central Northeast Washington. In total, the Watts Branch watershed consists of 3.53

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[200] Housing Committee of the North East Boundary Citizens Association, "Protest of Location of National Capital Housing Authority Project on Tract Between Division Ave. and 50th St., and Foot St. and Washington Pl., N.E.," October 15th, 1943; Folder Lincoln Heights Dwellings 1943-1945, Box 1, ntry P 23: Records Regarding Public Housing Dwellings, 1943-1959, RG 302, NARA.

[201] "Appraisal Report, Lincoln Heights"; Box 5, Land Acquisition Project Files USHA, DC-1-9 (Washington DC) to DC-1-16 (Washington, DC), RG 196, NARA II.

[202] The NCPPC proposed turning the creek into a linear park in the 1920s, in part to help reduce the threat posed by the flood-prone creek. Work on the park began in the 1930s. See Sarah Anne Hughes, "Stream of Consciousness: Marvin Gaye Park is Ready for its Next Act," *Washington City Paper*, May 29th, 2015.

square-miles.[203] In the 1940s, as Lincoln Heights was being built and tenants moved in, the government of the District of Columbia and federal planning agencies began tackling the problem of frequent unpredictable flooding along Watts Branch. In early 1943, for example, the NCPPC purchased fifty lots on either side of the creek between Minnesota Avenue to the west and Division Avenue to the east, which is where the culvert north of Lincoln Heights begins. The NCPPC wanted to prevent construction too close to the creek, "which overflows its banks after heavy rains[,]" according to Norman C. Brown, then the land purchasing director for the Commission.[204] At the same time that the Lincoln Heights complex was under construction, just a few yards to the north the NCPPC was working on flood abatement strategies. Federal agencies in the District of Columbia hoped that by channelizing and burying Watts Branch they could prevent future flooding at the new housing developments being built in and around Lincoln Heights in the early 1940s. Their efforts proved futile. In the 1950s and 1960s, suburban development around the sources of Watts Branch in Prince George's County added more impervious surfaces to the watershed, which demanded that Watts Branch carry water and run-off in increasing volumes towards the Anacostia River.

Suburban developments were not solely to blame for the flood risk posed by Watts Branch. The NCPPC's re-routing efforts sometimes overburdened sections of the creek. The agency dug a new streambed in 1950—more than a decade after the opening of Lincoln Heights—which turned at a nearly ninety-degree angle to the west of Division Avenue, just a few feet north of the public housing complex. The new course was a result of the District of Columbia's desire to straighten the course of Watts Branch, "which [had] been repeatedly flooded[.]"[205] Apparently, those efforts failed. Eight years later, spurred by demands from a local citizen advocacy group, the District of Columbia once again embarked on "[a] project designed to eliminate flooding of homes by Watts Branch during storms[.]"[206] The creek posed periodic threats to local homeowners and developers

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[203] United States Environmental Protection Agency, Office of Water, "District of Columbia: Restoration Efforts Stabilize Watts Branch and Reduce Sediment Loading," https://www.epa.gov/sites/production/files/2015-10/documents/dc_watts.pdf (accessed December 1st, 2019).
[204] "Stricter Rule On Buildings' Height Asked: 50 Lots Acquired To Help Complete Flood-Control Plans In Watts Branch," *The Washington Post*, May 22nd, 1943.
[205] "Watts Branch Contract Let," *The Washington Post*, September 10th, 1950.
[206] "Flood Control Project Begun," *The Washington Post and Times Herald*, January 23rd, 1958.

as eastern Washington, D.C. continued to grow. Older hydrological features of the region—like Watts Branch and its tributaries—were embedded within a larger envirotechnical system that various city agencies built to ensure the safe and profitable development of this part of eastern Washington, D.C. Sometimes however, the modifications that those agencies made to support development acted in frustrating and complicated ways, which necessitated further action to maintain the envirotechnical system.

As with Barry Farms, the ADA hired an appraiser to visit the Lincoln Heights site and report on the condition of existing property, the landscape, and its monetary value. The appraiser visited the sites that the NCHA hoped to acquire and traversed the yards and woods abutting residents' homes. The appraiser's report thus revealed much about the variations in elevation across the site. Based on his findings, it appears that the ADA chose to embark on an ambitious project. The obvious and apparent variations in elevation at the site would require extensive modifications if the ADA hoped to build on the scale that it (and the USHA) desired. As detailed below, the contractors who built Lincoln Heights would face difficulties while trying to build the complex in conformity with the ADA's vision. They reported a great deal about the environmental obstacle posed by the relationship between the environmental features of the site and the materials available for construction.

In order to accurately describe the characteristics of the landscape at Lincoln Heights, the appraiser divided the property into 253 individual squares, each of which was about 100 feet deep and fifty feet across. Of these 253 squares, the appraiser listed only seventy-four as level. For the remaining squares, the appraiser found that 126 were sloped (meaning they changed in grade from about two to four feet from front to back); twenty-six were very irregular, four were rough, twenty were rough and irregular, and three were rolling and rough. This means that only 29% of the property was level. The majority of the property's squares were sloped (about 50%) and the rest (21%) were rough, irregular, or rolling.[207] The appraiser's descriptions of the small farmhouses and the surrounding terrain at the Lincoln Heights site showed that the builders would face uneven ground during construction, much as they had at Barry Farms.

[207] Ibid.

During the construction process, the contractors would also make the executive board keenly aware of the complexity of the Lincoln Heights site, and its vulnerability during particular seasons and because of the modifications they made to support a large housing project. Due to financial and material constraints the ADA was unable to address these issues as the complex was built, thus locking together manufactured and natural components of an envirotechnical system that interacted poorly with each other. While the envirotechnical system at Lincoln Heights would continue to work in dynamic ways, thus perpetuating the envirotechnical obstacles associated with the materials that the contractors first witnessed during construction, the ADA was left in a position of powerlessness to respond to those obstacles. It was too constrained by the wartime economy. Thus, the envirotechnical system would continue to build and rebuild itself, damaging the structures that residents relied on.

Building Lincoln Heights: Contractors Face Seasonality and Flooding, 1943-1945

As was the case for Barry Farms, when the NCHA first began construction at the Lincoln Heights site, some local homeowners expressed dissatisfaction with the siting of the project. White homeowners in the surrounding areas did not want to live in close proximity to a large public housing complex for African Americans. Charles M. Thomas, then the President of the Northeast Boundary Association, wrote about his concerns in a 1943 letter to Eleanor Roosevelt.[208] According to him, the Association looked on the African American communities as backwards and undeveloped. "[T]he old Lincoln

[208] Roosevelt had long been interested and active in Progressive-era causes such as housing, education, and general urban issues. In many ways she embodied similar values to those of reformers like John Ihlder. Her husband's role as the 32nd President from 1933-1945 gave her an advantage in advocating for particular Progressive causes, as well as the financial and political platform to address perceived problems. Contemporary sources describe Roosevelt as "interested in progressive education and social questions, housing, and the general furtherance of women's and children's causes[.]" [See: The Poe Sisters, "Wives of Presidents Have Been Active In Organizations Promoting Public Welfare: Mrs. Eleanor Roosevelt Interested in Housing and Education," *The Washington Post*, January 20th, 1937. Roosevelt also served as the honorary president of the Washington Committee on Housing (later renamed the Washington Housing Association), which consisted of a number of private citizens of means who sought "to improve housing conditions in Washington, particularly among families of low income." See "Vacant Homes Found for All Alley Residents: House District Committee Gets Report From Housing Group," *The Washington Post*, May 3rd, 1934 and "MS 597 Washington Housing Association Records, 1935-1959," *Special Collections Finding Aid* (Washington, DC: Historical Society of Washington, DC, revised April 2016) available online at http://www.dchistory.org/uploads/fa/ms0597.pdf (accessed May 14th, 2019).

Road", Thomas writes, "now resembles a post Civil War ramshackle colored highway through some backward village."[209] Thomas's letter to Roosevelt built on a previous complaint from the North East Boundary Association against the siting of public housing in the Lincoln Heights area. In October of 1943, one month before the Association contacted Roosevelt, its Housing Committee petitioned the NCHA not to construct public housing in the neighborhood. This complaint was one of many from white homeowners across Washington who were soon to be neighbors with public housing residents. This was sparked by racial animosity, primarily, since the plans for Lincoln Heights stated that the complex was meant for African Americans.[210] Local white homeowners were aware that the project would be located in a black neighborhood, but they worried about the concentration of so many families in Lincolnville. Despite white residents' concerns, planning and construction for Lincoln Heights began in earnest in 1944 and continued into 1945.[211]

Ihlder recruited the architectural firm Saarinen and Swanson to design Lincoln Heights. The firm's architects planned Lincoln Heights with a system of curving roads that provided access to greenspace and the freestanding buildings, bucking the uniform grid evident throughout most of the District of Columbia.[212] Even though the complex was being built during a global armed conflict and in the capital of one of the major combatants, Ihlder stuck to the vision he had held for decent, safe, and sanitary housing throughout his career. Still, economic and institutional forces would place a great deal of stress and frustration on the NCHA and its contractors as the complex was built. Ultimately those forces would provide greater room for the natural features of the

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[209] Charles M. Thomas, President of the North East Boundary Citizens Association, to Eleanor Roosevelt, November 14th, 1943; Lincoln Heights Dwellings 1943-1945, Box 1, Entry P 23: Records Regarding Public Housing Dwellings, 1943-1959, RG 302, NARA.

[210] "War Housing Project Must Go, NHA Rules," *The Washington Post*, August 18th, 1945.

[211] Records on the construction of Lincoln Heights for 1944 are scarce, consisting primarily of one memorandum from John Ihlder to the heads of the various offices under the National Capital Housing Authority saying that it was necessary to change the name of the project from Hillside Dwellings to Lincoln Heights, in order to distinguish the project from Highland Dwellings, located in Southeast Washington. See: Memorandum from John Ihlder to NCHA Heads of Offices, October 12th 1944; Lincoln Heights Dwellings 1943-1945, Box 1, Entry P 23: Records Regarding Public Housing Dwellings, 1943-1959, RG 302, NARA.

[212] Eeva-Liisa Pelkonnen and Donald Albrecht, editors, *Eero Saarinen: Shaping the Future* (New Haven and London: Yale University Press, 2010), 145. Saarinen would go on to design the Gateway Arch, which was completed in the 1960s.

landscape to undermine the stability of the manufactured components. This was clear to the contractors as they built Lincoln Heights.

Furthermore, even though the pressure of wartime population surges demanded quick and timely completion, the Lincoln Heights contractors continually failed to meet construction deadlines. There were two reasons for these delays. First, labor strikes on the Lincoln Heights site took time away from construction and planning. Second, environmental obstacles like the quality of the soil for construction purposes and rainfall pushed back work on the site by damaging some of the materials used. What the history of construction at Lincoln Heights reveals is that the quality of the materials used in public housing mattered almost as much as the siting of the complexes in some cases. Those two envirotechnical obstacles were related, but it is possible to distinguish their roles within the larger system. When substandard materials interacted with local weather patters, they often broke down. The deterioration of materials at the Lincoln Heights during construction was a consequence of local patters of rainfall and soil movement. Thus the obstacles that the contractors encountered were precursors to later problems with flooding and structural instability that emerged in the 1950s.

Once again in the case of Lincoln Heights, the NCHA opted not to involve the Board of Commissioners of the District of Columbia. Responsible for inspecting the structural quality of the buildings, the layout of infrastructures throughout the buildings and the complex, and the strength and stability of the soil, the Board of Commissioners could have offered significant help to the NCHA and its contractors. With the federal government encouraging the rapid completion of wartime housing, however, the District of Columbia was unable to play a role in the design and construction process. The NCHA resisted requests from both the District government and its own contractors to invite expert inspectors on site to monitor and certify the work being done. Homer J. Smith, the site manager for Lincoln Heights, noted this when he wrote to John Ihlder, stating that "[s]ince FPHA [Federal Public Housing Authority] has decided to proceed with the construction of Lincoln Heights Dwellings without obtaining a permit from the District of Columbia, it is strongly recommended that specialized personnel be obtained to inspect

the plumbing, heating, and electrical work."[213] Smith went on to write that "[t]he above recommendation is made on the assumption that the District of Columbia Inspector's Office will not inspect the work, that a new employee properly qualified to perform the work probably is unobtainable at the present time[.]"[214]

The dispute between the NCHA and the Board of Commissioners became an item of public knowledge when *The Washington Post* reported on it in July of 1945. On July 7th, 1945, *The Washington Post* reported on the decision. "Failure of the Federal Public Housing Authority to seek a local building permit", the article states, "for constructing…Lincoln Heights housing development in Northeast Washington is based on 'national policy' and not on intent to violate District building requirements."[215] Oliver P. Winston, director of the District of Columbia's field office for the Federal Public Housing Administration, claimed that the FPHA, as an agency of the federal government, could not be compelled to follow local municipal regulations. The FPHA's official position was that the municipal government had no standing to compel a federal agency to follow its permitting rules.

The Board of Commissioners of the District of Columbia thought otherwise, and sent word to Tom C. Clark, then the Attorney General for the United States, that the work was illegal. The Commissioners pointed out that in addition to failing to secure a building permit, the builders also refused to sign a covenant that ensured the construction of separate water, sewer, and electrical systems in each building. The National Capital Housing Authority, acting as an agent for the Federal Public Housing Administration, called on the contractors to follow all local District of Columbia standards and regulations.[216] Yet the sources show that neither the FPHA nor the NCHA followed the basic provision in the city's building code to allow an inspector to investigate the site and issue a permit. Furthermore, the NCHA disregarded the site manager's suggestion to call in an outside expert to assess the project.

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[213] Homer J. Smith to John Ihlder, "Heating, Plumbing, and Electrical Inspection Recommended for Lincoln Heights Dwelling," April 2nd, 1945; Lincoln Heights Dwellings 1943-1945, Box 1, Entry P 23: Records Regarding Public Housing Dwellings, 1943-1959, RG 302, NARA.
[214] Ibid.
[215] "FPHA Pleads National Policy in Building Without Permit," *The Washington Post*, July 7th, 1945.
[216] Ibid.

Ultimately, the NCHA won the dispute and carried on construction under its own guidance and monitoring. Realizing that he would not receive the District's approval of his crew's work, Smith issued his own recommendations to the NCHA. He wrote:

> 1. That extreme care be used in deciding when proper soil has been found on which to place footings.
>
> 2. That in any case of doubt, load tests be run before proceeding with the footing construction.
>
> 3. That changes in water levels be observed as a guide to possible future shrinkage to be expected in the subsoil.
>
> 4. That buildings be placed and grading be completed in the lower portions of the site before placing buildings close to tops of major cuts in grade.
>
> 5. That the compliance with D.C. Code requirements be given special attention.[217]

Smith concisely details the relationship between slope, water, and soil in the Lincoln Heights area. Not all slopes respond the same way to the flow of water, and the relationship between soils, water, and subsidence are questions for engineers.[218] The degree of subsidence, for example, depends on the storage capacity of various strata within the ground, and the average recharge and discharge rate of the soil.[219] Land and soil movement is also influenced by the presence or absence of trees and other vegetation on the ground. Through rigorous testing experts could have helped guide the construction of Lincoln Heights. Smith, in the above excerpt, called for load testing to determine the specific weight of any foundations that the soil could carry without becoming damaged as

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[217] Homer J. Smith to P.W. Clogston, "Lincoln Heights Dwellings," April 3rd, 1945; Lincoln Heights Dwellings 1943-1945, Box 1, Entry P 23: Records Regarding Public Housing Dwellings, 1943-1959, RG 302, NARA.

[218] Subsidence refers to the downward shifting of soils and sub-strata. The movement of soil downwards can warp or otherwise damage building foundations.

[219] P.A. Domenico and M.D. Mifflin, "Water from Low-Permeability Sediments and Land Subsidence," *Water Resources Research* 1, no. 4 (Fourth Quarter, 1965), 563; 563-566.

a result of land subsidence. He indicated that the site was potentially unstable, and that the NCHA should take proper precautions to build lasting structures.

The contractors witnessed the troubling relationship between the modified landscape and seasonal rainfall firsthand. In November of 1945, P.W. Clogston, then the Superintendent of Construction, wrote to Bernard E. Loshbough, then serving as the NCHA's Deputy in Charge of Operations, that the project was only 62.4 percent complete, when in fact the agreed upon schedule would have placed Lincoln Heights at 99.7 percent complete by that month.[220] Clogston identified the main issue at hand when he wrote that extremely heavy rains during the month of July delayed progress on laying foundations and actually constructing some of the last remaining buildings on the site. That is, the typically heavy summer rains in the District of Columbia set back work on Lincoln Heights. Furthermore, the District of Columbia Department of Sanitation was concurrently working to build sewers and water lines in the area, leaving many of the streets torn up since no work could be done during heavy rainstorms.[221] The National Capital Housing Authority was kept informed about the role of the weather and frequent heavy rains that mitigated progress on the site.

Apart from the envirotechnical obstacles posed by the site itself, Lincoln Heights's contractors also expressed dismay about the quality of available materials. For example, in the summer of 1945, Homer Smith wrote to inform John Ihlder that there was

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[220] P.W. Clogston, Construction Superintendent to Mr. Bernard E. Loshbough, Deputy in Charge of Operations, "Report on Progress and Status of Lincoln Heights," November 30th, 1945; Lincoln Heights Dwellings 1943-1945, Box 1, Entry P 23: Records Regarding Public Housing Dwellings, 1943-1959, RG 302, NARA. Contractors at the Lincoln Heights site also contended with labor unrest, which further delayed construction. In a letter from P.W. Clogston to John Ihlder, the superintendent of construction at the Lincoln Heights site mentioned that one member of the Engineers, Architects, and Draftsmen Union began to picket work at nine in the morning on July 10th, 1945. As the number of striking workers rose, the teamsters joined in and refused to drive crucial building material to the site. By the morning of July 11th, work at the site had completely shut down. The matter was resolved within a few days through negotiations between the construction managers and the draftsmen, but the strike clearly delayed work at the site, frustrating the managers and superintendents at Lincoln Heights. The engineers who struck affected the construction project at a crucial early stage, since they were "held responsible for the mechanical and other technical features of the finished structure, including its safety, utility for specific functions, and architectural detail." See: P.W. Clogston to John Ihlder, "Labor Situation at Lincoln Heights," July 11th, 1945; Lincoln Heights Dwellings 1943-1945, Box 1, Entry P 23: Records Regarding Public Housing Dwellings, 1943-1959, RG 302, NARA.

[221] Clogston to Loshbough, 2.

"an acute shortage of brick in the Washington area."[222] The conditions of the Lincoln Heights site would place great stress on the available materials, especially considering how little investment the NCHA made in testing and examining the hydrology and soil stability of the area.

Rainstorms also affected the roofs of the buildings that were still being built. Throughout months of heavy rainfall in 1945, the contractors were still hurrying to complete the roofing on the remaining structures. Half-finished buildings could be found throughout the building site. Lumber shortages complicated the construction process. The workers were forced to rely on cheaper—and flimsier—gypsum or drywall boards instead of wood for the roofs and the walls. Clogston noted a number of problems with gypsum, foremost of which were its weakness, relative to wood, and also its tendency to crumble and dissolve when exposed to water. On the last buildings constructed at the site, the roofs consisted of two layers of half-inch thick gypsum sheathed in tar. As Clogston put it to John Ihlder, "[i]t is unfortunate that such material of only one inch thickness must be used in a permanent project, but with the present shortage of lumber it is probably deemed necessary."[223] In some cases, Clogston noted, the roofing had cracked under the weight of the workmen, calling into question how the coating of the roof could proceed at all, considering that workers had to be on top of the roof to coat it.[224] Furthermore, children from the completed units and the surrounding neighborhood sometimes snuck into the construction site, playing on the roofs of the uncompleted buildings and threatening to damage the gypsum boards. As noted above, the summer of 1945 was fairly wet, according to the construction site superintendent. Therefore, "any leaks that may occur repaired immediately, as the gypsum board deteriorates very rapidly when it gets wet."[225] The contractors likely had a very small window, then, to adequately coat the gypsum roofs after they were built to protect against dampness and rain.

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[222] Homer J. Smith to John Ihlder, "Change in Brick Color for Building 5a, 5b, 6, and 7 located at S.W. Corner of the Project. Lincoln Heights Dwellings, DC1-13," June 16th, 1945; Lincoln Heights Dwellings 1943-1945, Box 1, Entry P 23: Records Regarding Public Housing Dwellings, 1943-1959, RG 302, NARA.
[223] P.W. Clogston to John Ihlder, "Roof Sheathing at Lincoln Heights," July 30th, 1945; Lincoln Heights Dwellings 1943-1945, Box 1, Entry P 23: Records Regarding Public Housing Dwellings, 1943-1959, RG 302, NARA.
[224] Ibid.
[225] Ibid.

Clogston and Smith were eyewitnesses to the construction of Lincoln Heights. Smith recommended additional testing to ensure that the buildings were properly built, while Clogston informed the executives about the rainy conditions at the site and how they delayed work and contributed to the deterioration of some materials. Taken together, Clogston and Smith spoke` to the poor quality of the materials used at the Lincoln Heights site and the environmental obstacles to its construction, respectively. There is little evidence that the NCHA adequately tested the site to ensure that buildings were built to withstand the flow of water and the movement of soils at the site. Indeed, the Authority was operating under pressure from the FPHA to build homes quickly. Furthermore, the NCHA's access to optimal building materials was severely constrained. The war demanded that those materials go to uses elsewhere. The observations that Clogston and Smith made prefigured many of the problems that would later emerge at the Lincoln Heights complex. As the envirotechnical system was built, it encountered several obstacles that the NCHA could not sufficiently address. The executives decided, instead, to use patchwork fixes like recoating roofs with bitumen.

The NCHA was candid about some of the obstacles that it faced during construction. In early 1945, John Ihlder remarked on the topography at the Lincoln Heights site. On February 5th of that year, Ihlder circulated a memorandum to the other board members of the National Capital Housing Authority pertaining to the consideration of the Lincoln Heights site for construction. Summarizing the problems inherent in actually building public housing in that area, Ihlder wrote:

> Lincoln Heights is illustrative [of the difficulties] of constructing public housing. The site was suggested to us by the NCP&PC because, due to topography, land division, street layout, land titles, etc., it was impracticable for private development.[226]

[226] John Ihlder to the Members of the National Capital Housing Authority, February 5th, 1945; Lincoln Heights Dwellings 1943-1945, Box 1, Entry P 23: Records Regarding Public Housing Dwellings, 1943-1959, RG 302, NARA. The site manager for Lincoln Heights was also aware of the rugged terrain of eastern Washington, D.C. in general. In a letter to Clogston, he wrote that Lincoln Heights "is located on hilly ground similar to the Fort Dupont and southern portion of Barry Farm sites[.]" See: Homer J. Smith to P.W. Clogston, "Lincoln Heights Dwellings," April 3rd, 1945; Lincoln Heights Dwellings 1943-1945, Box 1, Entry P 23: Records Regarding Public Housing Dwellings, 1943-1959, RG 302, NARA.

Ihlder was well aware of the impracticalities of constructing the Lincoln Heights public housing complex, given the complexity and variation of the terrain of the surrounding area. He made his fellow board members aware of those issues as well. The National Capital Parks and Planning Commission too saw that the topography of the site rendered it unsuitable for private development. Instead, the NCPPC assumed that public funds could help develop the site for low-income housing. Yet public funding did not guarantee positive outcomes for the completed structures. The NCHA was able to modify the landscape and erect housing on a large scale at Lincoln Heights. In doing so, it encountered environmental stresses on its buildings stemming from seasonal rainfall and sloping hillsides. Its ability to react to those obstacles was constrained by institutional politics and a scarcity of key materials. Pressure from the FPHA to build quickly also meant that the NCHA flaunted city regulations—such as the inspection process—meant to ensure the stability, safety, and durability of construction projects. Ultimately, Lincoln Heights opened to the public without a resolution to those obstacles. By the 1950s, Lincoln Heights's failure to provide decent, safe, or sanitary housing was increasingly obvious.

Despite the frequent delays at the site, contractors finished most of their work in December of 1945, to the relief of the National Capital Housing Authority. In building Lincoln Heights without regard for some District regulations, however, Ihlder likely ended up on the bad side of the city's Board of Commissioners. Still seeking to exercise some sort of oversight over the project, the Commissioners requested information about the extent to which the Lincoln Heights project deviated from the city's building code. If those deviations were not adequately addressed, the Commissioners wrote, then the project could not be opened to tenants.

Ihlder wrote a letter in response to some of the District Commissioners' queries about the Lincoln Heights project. One of the exemptions that Ihlder sought pertained to the grading of the site. The District Building Code stated that the finished distance between the first floor elevation of a particular apartment building and the grade of the

outside wall could not exceed five feet.[227] This regulation kept the foundations of lower buildings from exposure to too much rainfall, which could contribute to flooding within the building and gradual decay of the foundation itself. If the foundation failed, the Commissioners worried that structural damage would occur elsewhere in the buildings. For buildings further downhill, the exceptionally steep grades could also contribute to flooding and water buildup in the rear of the structures.

To this concern, Ihlder wrote that "[t]he exceptional steep and irregular topographical conditions on this site made the design problem most difficult, and at some buildings, conditions forced us to exceed the five foot limitation or to resort to excessive retaining wall construction."[228] For reference, some of the grading in the center of the Lincoln Heights complex is pictured below:

Image taken from Andrew Giambrone, "D.C. Housing Authority Teases Plan to Refinance about a Third of its Public Housing Units," *Washington, DC Curbed*, February 26th, 2019,

[227] National Capital Housing Authority, "Re: Lincoln Heights Dwellings, DC 1-13," to Board of Commissioners of the District of Columbia, December 20th, 1945; Lincoln Heights Dwellings 1943-1945, Box 1, Entry P 23: Records Regarding Public Housing Dwellings, 1943-1959, RG 302, NARA.

[228] Ibid.

https://dc.curbed.com/2019/2/26/18241322/dc-public-housing-authority-dcha-finance-conditions (accessed May 10th, 2019).

The image above shows the retaining walls built around complexes located on lower elevations. The first floor apartments are visible, as is the aboveground distance of the exterior wall around the foundation of the buildings further uphill. Ihlder's comments were meant to show that the varied topography of the site itself rendered the District Building Code's stipulations unfeasible. A few years after Lincoln Heights was completed, the topography, working in conjunction with heavy rainfall in the area, would prove detrimental to the buildings' structural integrity and residents' health and wellbeing. The poor quality of the building materials within the structures presented another envirotechnical obstacle that undermined the integrity of the complex.

Once it was completed in late 1945, the NCHA took full control over the Lincoln Heights, since the FPHA had completed its financing of the construction process. This meant that the NCHA would be tasked with maintenance, repairs, and other physical aspects of the Lincoln Heights complex. The construction managers did their job informing the NCHA executives about the environmental constraints of the site. It now fell to the Authority to properly manage and maintain its new complex. In this regard, it is worth reiterating what the executives knew about the physical construction and natural environment of the Lincoln Heights neighborhood. First, Ihlder and the Board of Directors were kept informed of the construction process, with all of the difficulties that the building crews encountered with the terrain and envirotechnical obstacles at the site. Second, work was delayed by strikes, rainfall, and a shortage of adequate material. Third, because of wartime restrictions, the contractors hired to build Lincoln Heights had to use materials that were not suited for the purposes to which they were put. The most structurally significant substitution was the use of gypsum boards for roofing, which cracked under the weight of workers and children who managed to sneak onto the site. In addition, rain corroded the gypsum boards, leading to crumbing roofs and leakage in the buildings. Heavy rainfall in spring and summer of 1945 exacerbated these problems, and the slow pace of construction overall likely did not help resolve the issue.

The construction of Lincoln Heights represented the establishment of a new envirotechnical regime. Built on a rolling terrain, the NCHA's initial modifications to the

site—the removal of preexisting structures and trees as well as grading the surrounding area to accommodate a large complex—changed the environment in significant ways that were meant to support decent, safe, and sanitary housing. Yet the human actors in this story were not the sole agents of change at the site. The hybridized landscape of public housing exerted pressure on the contractors themselves, who contended with heavy rails on sloping hills, which made process of laying foundations difficult. Furthermore, the elements stressed the types of materials that went into the complexes, damaging them through heavy rains combined with the weight of the roofers and children who made their way onto the sites. Finally, bureaucracies sometimes worked at cross-purposes. The District of Columbia could not properly inspect the site, which meant that the envirotechnical system was likely less stable than if proper care had been taken to test and monitor work. The FPHA eliminated the District of Columbia's participation in the project. When the Board of Commissioners requested information about the extent to which the site conformed to city code, the NCHA responded by asking for forgiveness for breaking the rules. The envirotechnical obstacles posed by the site and the materials used in the complex were obvious to the builders from the very beginning. They undermined the NCHA's pursuit of decent, safe, and sanitary housing, which left hundreds of African Americans in deteriorating homes.

Eroding Slopes and Pooling Water: Life at Lincoln Heights in the 1950s and 1960s

For the first decade after it was completed, life at Lincoln Heights went on without much concern or attention from the National Capital Housing Authority. The Board of Directors only discussed the project in passing, as was the case with most complexes after they were completed. The NCHA executives were more interested in the bigger question of how best to house the city's poor than the day-to-day operations of its complexes, which were left to local managers. Over the course of the first decade of operations at Lincoln Heights, the envirotechnical obstacles that the contractors noted at the site and in the buildings began to reemerge.

In 1949, George W. Miner, a manager at the Lincoln Heights site, wrote to John Ihlder about mounting garbage at the site. According to Miner, tenants at Lincoln Heights had complained for several months before he sought attention and help from the National

Capital Housing Authority executives. Fourteen incinerators had been built throughout the complex to accommodate the demands that four hundred and forty families' garbage placed on the surrounding area. Yet, according to Miner, "[t]he insufficient capacity of outside incinerators, the size of the openings for the deposit of trash and garbage plus the unusual velocity of the wind are causes of the litter problems at Lincoln Heights."[229] Apparently, high wind speeds and the exceptionally hilly conditions of the Lincoln Heights area made the trash and litter situation particularly difficult to deal with. Since 1946, the team that ran the Lincoln Heights complex had requested $20,000 to build retaining fences, which "would serve as a trap for litter blowing from the outside incinerators on top of Lowrie Place Hill", making the site easier to maintain.[230] Miner's concerns show that the topography of Lincoln Heights could make it difficult to keep the complex clean. The hills on which the complex was built posed a distinct set of environmental problems for the site managers. The visual blight of litter strewn about the grounds and carried down hill by drafts was less significant, however, than the structural problems that would come to plague the site.

In 1952, seven years after Lincoln Heights was completed, John P. Prescott, the Assistant Director for Management and Disposition for the Public Housing Administration, began carrying on a correspondence with James Ring, who took over the role of executive officer after Ihlder's retirement. Prescott was a federal administrator tasked with investigating housing built with assistance from the federal government during the Second World War. His inspections revealed several structural problems within the Lincoln Heights complex. Upon visiting the site, Prescott noticed that periods of heavy rain could pose potential problems for the structural integrity of the buildings as well as the landscaping around the homes. The investigator noted the envirotechnical obstacles posed by a poor relationship between the materials and the environment at Lincoln Heights just seven years after the contractors finished work.

Prescott noted that on the roofs of the different apartment buildings, the flashings had badly corroded. Flashings are impervious structures built to prevent water from

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[229] George W. Miner to John Ihlder, "Recommendations for Improvement of Appearance of Lincoln Heights DC 1-13," January 13th, 1949 Lincoln Heights Dwellings 1943-1945, Box 1, Entry P 23: Records Regarding Public Housing Dwellings, 1943-1959, RG 302, NARA.
[230] Ibid.

flowing through materials or spaces that could be penetrated, like the joints between a chimney and the roof. Rather than calling for rebuilding the flashing on the roofs of affected apartment buildings, Prescott suggested recoating the roof with additional bitumen, in order to prevent seepage to the floors below.[231] In a letter from P.W. Clogston seven years prior, he noted that the gypsum boards were particularly vulnerable to damage given the heavy rains in the area. While recoating the roofs might have helped in the short-term, Prescott's solution left in place the gypsum boarding that had caused so much trouble for the contractors. Furthermore, seven years had passed since the end of the Second World War. Material shortages no longer plagued domestic worksites on the scale that they had during the conflict. Prescott's suggestion was cheaper than re-fitting the roofs with timber, but also left units susceptible to flooding and warping if heavy rains seeped through the gypsum.

Prescott's letter also noted the extensive damage that rainfall brought to the grounds of the Lincoln Heights complex. He noted that "[a]dditional retaining walls should be erected at the foot of eroded slopes" and, commenting on the shifting soils of the site, that "[b]adly eroded slopes at northwest end of Lourie [sic] Street near Division Avenue bridge require terracing."[232] Here, Prescott noted that because of the extensive rainfall at the Lincoln Heights site and the particularly steep slopes between the different apartment complexes in the area, the soil there was not particularly stable, and had shifted a great deal since the site was opened to tenants. The National Capital Housing Authority had instructed construction crews to build some retaining walls in the past, as stated in Ihlder's response to the Board of Commissioners' 1945 inquiry, but they had not stemmed erosion at the site. Just seven years after crews finished work at the complex, a federal administrator noticed the obvious damage wrought by the natural shifting of the soil on the Lincoln Heights hilltop. This was an envirotechnical obstacle posed by the siting of the complex and the grading that was necessary to support the type of housing that Ihlder envisioned. It was similar to the problems that contractors at Barry Farms faced when they cut into a hill, leading a wall at St. Elizabeth's hospital to partially

[231] Letter from John P. Prescott, Assistant Director for Management—Disposition, Public Housing Administration to National Capital Housing Authority, April 4th, 1952; Lincoln Heights Dwellings 1943-1945, Box 1, Entry P 23: Records Regarding Public Housing Dwellings, 1943-1959, RG 302, NARA.
[232] Ibid.

collapse. Proper drainage seemed to be a problem at both Barry Farms and Lincoln Heights.

In January of 1953, Prescott followed up on his inspection from the preceding April and found little improvement at Lincoln Heights. He noted structural problems with some of the Lincoln Heights buildings. For example, debris from messy and cluttered basements had stopped up some of the drains, leading to water pooling and flooding in a handful of buildings. Of course, the National Capital Housing Authority had known about the problem of trash disposal in the structures since 1949, when George Miner contacted the Board of Directors about the lack of capacity for trash disposal. Some of the buildings also had leaking water lines, which would have added to the pools of water in the buildings' basements. One factor that likely complicated the problem of flooding and broken water lines was the NCHA's decision to ignore the District of Columbia municipal code calling for individual utility lines for each building. As evidenced at Barry Farms, which also had clustered utilities, when one drain or pipe stopped working, it also hampered all of the following lines. This allowed water to pool, which added to the patterns of flooding evidenced in almost all of the other chapters.[233] Prescott also noticed that some of the concrete retaining walls on the property had cracked because of the shifting soils and heavy rainfall in the area. The retaining walls had originally been built to keep the ground in place given the grading of the property, as Ihlder explained in his 1945 letter to the District of Columbia Board of Commissioners.[234] The re-graded and terraced site stressed the material components of the envirotechnical system.

Although Prescott knew of the structural instability at some of the buildings on the site, and brought it up to the NCHA's executive board, it is unclear what steps were taken to rectify those conditions. The question of who would pay for the necessary repairs and improvements also mattered, and neither the Public Housing Administration nor the National Capital Housing Authority seemed willing to foot the bill. In June of 1953, Prescott wrote to the National Capital Housing Authority to state that "[w]e recognize that considerable work is required to improve drainage, control erosion, and

[233] Kenilworth Courts is the exception to this rule.
[234] Letter from John P. Prescott, Assistant Director for Management—Disposition, Public Housing Administration to National Capital Housing Authority, January 12th, 1953; Lincoln Heights Dwellings 1943-1945, Box 1, Entry P 23: Records Regarding Public Housing Dwellings, 1943-1959, RG 302, NARA.

provide 'Standard' conditions for landscaping. However, it is strongly recommended that a study be made with a recognized landscape architect, or engineer, who will collaborate with Local Authority's technical staff, and who will prepare plans and schedule of operations for ultimate correction of this complex problem."[235]

During the postwar period, however, the NCHA faced a diminished budget. This would affect the Authority's ability to rectify the envirotechnical obstacles at its sites, which in turn amplified the effects of natural processes on the materials within the envirotechnical system. Between 1946 and 1960, the federal allocation for the Authority averaged about $35,018 for operations and maintenance at finished projects.[236] The Authority experienced a budget increase between the years 1946 and 1951, when the budget climbed from $19,250 to $38,000. Between 1951 and 1960, the budget peaked at $45,000 in 1953 and was at its lowest point from 1957-1959 at $38,000. During Prescott's investigation, the NCHA was budgeted $38,000 from Congress for 7707 total units.[237] Considering the significant envirotechnical obstacles present at complexes like Barry Farms and Lincoln Heights, this may not have been enough to fully redress the problems that Prescott observed. The financial position of the NCHA limited its ability to manage the negative outcomes of the envirotechnical system that it had built during the Second World War.

Prescott's statement to the National Capital Housing Authority echoes the comments made by Homer Smith, the site superintendent during construction, who in 1945 recommended that if the NCHA chose not to adhere to District regulations, it should at least hire an outside expert to study the site. Prescott stated that rather than

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[235] Letter from John P. Prescott, Assistant Director for Management—Disposition, Public Housing Administration to National Capital Housing Authority, June 15th, 1953; Lincoln Heights Dwellings 1943-1945, Box 1, Entry P 23: Records Regarding Public Housing Dwellings, 1943-1959, RG 302, NARA. The same letter states that the Public Housing Administration would be unwilling to pay $8,000 for treatment of termite infestations at Lincoln Heights, the James Creek Dwellings, and Barry Farm because termites are the individual renters' problem. For the historicization of this particular way of thinking about vermin, see Dawn Day Biehler, *Pests in the City: Flies, Bedbugs, Cockroaches, and Rats* (Seattle and London: The University of Washington Press, 2013). For a discussion of Biehler's work in the context of this dissertation, see chapter one, pp. TBD.

[236] $35,018 is equivalent to about $460,000 in 2020. All of the budget figures are available from FRASER, a product of the St. Louis Federal Reserve Branch, which compiled historical US budget. See FRASER, *Budget of the United States Government*, https://fraser.stlouisfed.org/title/budget-united-states-government-54?browse (accessed May 14th, 2020).

[237] This means that the Congressional allocation for maintenance and operations was $4.93 per unit in 1952 would be equivalent to $47.70 in 2020.

funding repairs outright, the Public Housing Administration would prefer that a recognized expert collaborate with the NCHA's staff to determine the best path towards the "ultimate correction of" the "complex problem" of structural engineering and soil at the Lincoln Heights site. In neither case, it appears, did the NCHA follow the advice of eyewitnesses to some of the problems of land subsidence and erosion at the complex.

The story of Lincoln Heights is not one of a public housing complex opening and then slowly decaying as a function of limited funding, lack of repairs, and neglect on the part of the municipal and federal authorities. It is evidence that significant envirotechnical obstacles—primarily, those pertaining to siting and materials—severely constrained the contractors' ability to erect stable and secure buildings. Those conditions were partially features of the site that the NCHA selected, and despite some modifications the Authority was unable to fully respond to the stresses brought about by the hydrology and topography of Lincoln Heights. From the planning stage forward, multiple parties warned the National Capital Housing Authority about the instability and precariousness of its surroundings. The site was prone to shifting soils, which threatened and indeed undermined the stability of building foundations and the security of retaining walls meant to limit soil movement in the first place. Furthermore, superintendents at the Lincoln Heights construction site noted crumbling roofs as a function of workers' weight as well as heavy rainfall at the site. Neither the materials used in the complex nor the site helped the NCHA achieve decent, safe, or sanitary housing.

What the NCHA tried to do, in a limited way, was reshape the landscape of Lincoln Heights. After the appraisers and surveyors gave the executives a general glimpse of the site, they guided their construction crews on how to modify and reshape the landscape in order to bring about positive results for its housing projects. Some of the managers involved in that process had experience with the landscape of Barry Farms, which also required large investments in earth-moving equipment in order to terrace the site, which would allow the projects to be erected. In Lincoln Heights, as in Barry Farms, the NCHA encountered one envirotechnical regime—that of the smallholding farmers and property-owners in the African American neighborhood—and tried to alter it in order to support a new function within the urban landscape: that of good, quality, low-income housing. Constraints from the realm of politics and the economy, however, worked to

undermine the NCHA's goals. The Authority ignored parts of the District of Columbia building code and the recommendations of its own managers that special attention should be paid to environmental conditions like soil stability and hydrology. Ultimately, then, the NCHA refashioned the site in ways that could not overcome environmental stresses. The substitution of poorer quality materials—like gypsum and bitumen for the roofing—further undermined the quality of housing at Lincoln Heights. Ultimately, the new envirotechnical regime at Lincoln Heights, which the NCHA hoped would provide for decent, safe, and sanitary housing, failed to do so. This had to do with the selection of the site, the materials used there, and the NCHA's ability to respond to environmental forces.

Life in the Lincoln Heights Complex in the 1960s and 1970s

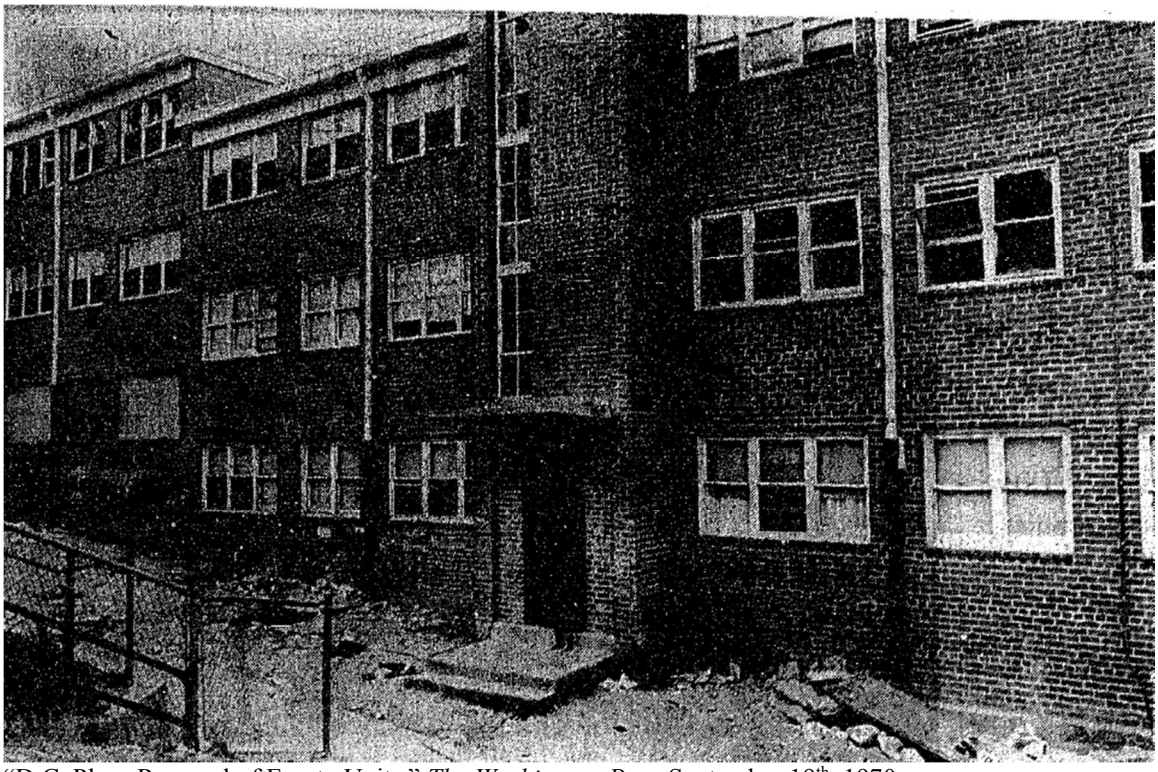
The source material on Lincoln Heights is distinct from that of the other case studies because little evidence remains about the daily lives of residents of the housing complex. Compared to first-hand accounts and interviews, there is much more documentation about the construction of the complex, and the difficulties that contractors encountered at Lincoln Heights when it was being built. In 1968, tenants of Lincoln Heights did join with residents of James Creek, Greenleaf Gardens, and Knox Hill in a suit against the federal government, the National Capital Housing Authority, and the government of the District of Columbia, charging that "the NCHA failed to maintain and repair their homes in accordance with the city's housing code and that the city…failed to enforce the code requirements on NCHA property."[238] Of course, that would not be the first time that the NCHA failed to adhere to the city code pertaining to housing conditions.

The plaintiffs in the 1968 suit were all residents of World War Two-era public housing complexes. In Lincoln Heights specifically, a survey conducted by the NCHA revealed hundreds of defects.[239] Those defects could be structural, as most of the housing complexes included in the suit contained holes in the walls or ceilings that were not patched or repaired. Considering the long history of structural damage at the Lincoln Heights complex, stretching back to the period when it was actually being built, the

[238] "Tenants in Public Housing Sue U.S., City for Repairs," *The Washington Post*, November 10th, 1968.
[239] Ibid.

structural deficiencies are not surprising. If these other World War Two-era public housing complexes were built with similar haste and improper materials, it would be unsurprising for rain to come in through cracks in the ceilings and walls during inclement weather.[240]

In order to address some of these lingering structural issues, the National Capital Housing Authority launched a novel program in the 1970s. A photograph from 1970 in *The Washington Post* captures the necessity of that rehabilitation program. The image reveals not only the steep grading between the different



"D.C. Plans Renewal of Empty Units," *The Washington Post*, September 19th, 1970.

buildings, but also the toll that twenty four years of erosion, shifting soils, and rainfall took on the concrete surfaces of the complex. Rubble and trash line the exterior surface of the complex. The concrete running the length of the buildings was cracked and eroded. Spalled concrete at the foot of buildings and along their perimeter spelled trouble, as it opened more passages for water to seep into the structures. Clearly the complex was desperately in need of repair, both inside and outside.

[240] Ibid.

The solution to the problem of blight at the Lincoln Heights complex came from a strange source: the District of Columbia Department of Corrections. In 1970, the NCHA and the Department of Corrections reached an agreement to allow somewhere between forty and fifty inmates, then housed in the Lorton Reformatory in Northern Virginia, to live on the Lincoln Heights property while performing long overdue repairs.[241] The prisoners were tasked with renovating the decrepit and nearly empty Lincoln Heights complex, including replacing appliances, repairing windows, doors, and roofs, and painting and plastering where necessary.[242] Articles covering these repair efforts demonstrate the degree to which Lincoln Heights had failed to bring about the standards of living first envisioned by the National Capital Housing Authority. Residents had been forced to contend with trash strewn across their laws, shifting foundations, flooding, and a host of other problems. Coverage of this work in *The Washington Post* revealed the other problems that residents suffered in the complex.

The program continued through 1971. Workers lived in a halfway house off-premises during the course of their repairs at Lincoln Heights. The workday was tightly scheduled in order to hasten the work. The Department of Corrections believed that the program would allow the incarcerated workers to further develop the plumbing, electrical, and carpentry skills that they had first learned in prison jobs. Indeed, Lincoln Heights was desperately in need of the sort of structural work that the prisoners performed.[243] It is difficult to believe that the apartment buildings at Lincoln Heights were meant to decay so quickly. Only twenty-five years after the complex was opened, it

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[241] Eugene L. Meyer, "Convicts to Rebuilt D.C. Housing Units," *The Washington Post, Times Herald*, December 31st, 1970.

[242] Ibid. The United States penal system has a long history of impressing prisoners to labor on projects for the public good. Of course, this system differs from, for example, corvée labor, which relied on healthy men in local communities to pay a tax-in-labor (rather than in money or goods) to provide public works like roads and other transportation systems, which sometimes benefited those laborers' communities. In the case of corvée labor, the tax was considered paid when the task was completed. These prisoners, on the other hand, were incarcerated for a set period of time, which extended beyond the completion of their work at Lincoln Heights. Furthermore, there was no guarantee that these prisoners would be offered rehabilitated housing once they were released. Thus the program detailed above offered the NCHA cheap and pliable labor during a time when public housing budgets were tightening. For more on corvée labor, see Lars Erickson, "Blueprint of Technical Professions: Changing Conceptions of Work and Education in Eighteenth-Century France," *The French Review* 85, no. 6 (May 2012): 1084-1097.

[243] Jean R. Hailey, "Convicts Renovate Housing," *The Washington Post, Times Herald*, February 11th, 1971.

was deteriorating from the inside and out. By 1971, twenty-six years after Lincoln Heights opened, the 440 families that had originally moved into the complex had already moved out, for fear of falling plaster, broken floors, and walls ridden with holes. Indeed, as records from the construction and early years of Lincoln Heights demonstrate, there were significant envirotechnical obstacles at work that degraded the foundations, walls, roofs, and basements of the apartment complexes from the very start.

Despite the prisoners' work, conditions at Lincoln Heights failed to improve. More families returned to the complex after the prisoners completed the rehabilitation project. In 1975, Nadine Winter, chair of the District of Columbia City Council's Committee on Housing, toured the Lincoln Heights complex. During her visit, Winter saw a pool of dark water about one foot deep in the basement of one of the apartment buildings, left sitting since rains during the previous week because both of the basement's sump pumps had failed.[244] Winter questioned the property manager on the site, who eyed the cameras and journalists trailing her warily. Winter also pressed the manager to respond to questions "about a hole under a pair of steps that had been caused by erosion."[245] The land beneath the Lincoln Heights buildings had not ceased to move since construction began in 1944.

Winter did not address the causal relationship between the local environmental conditions and structural problems at the Lincoln Heights site. She was likely unaware of the environmental history of the site. But it is possible to connect the problems that Winter observed in 1975 to those that Prescott had warned about twenty years earlier and those that the site superintendents had seen in 1945. All of these individuals witnessed how the topography and hydrology of the Lincoln Heights site had conspired to weaken the apartment buildings and imperil tenants. They all noted the problems associated with erosion at the site. The National Capital Housing Authority had a sense of the difficulties it would encounter, and the construction phase revealed far more about the qualities of the landscape. Ultimately, the envirotechnical obstacles that the NCHA encountered worked counter to its pursuit of decent, safe, and sanitary housing.

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[244] LaBarbara Bowman, "Housing Water Problem Angers Winter," *The Washington Post*, October 1st, 1975.
[245] Ibid.

What did this mean for the residents? Lincoln Heights had always been segregated, first by policy, and then by fact. It was built on top of a former African American community, which had built its own envirotechnical regime. The NCHA sought to reorient the landscape and put it to use as a space that could support decent, safe, and sanitary housing. The landscape was meant to help improve the health and economic wellbeing of tenants at Lincoln Heights. Unfortunately, the NCHA was unable to surmount the envirotechical obstacles that were so apparent duruing and after construction. The wartime economy had set in motion a building program that was constrained by the environment from the start. The Authority's postwar financial situation preempted any major changes to the envirotechnical system that the NCHA built. Thus, 440 African American families were trapped in deteriorating housing. The combination of a regarded landscape and poor materials allowed environmental conditions to degrade the quality of the NCHA's housing stock. The homes that it built perpetuated the unequal distribution of environmental burdens to black Washingtonians.

In a political twist, by the 1970s, the National Capital Housing Authority was left without increases in federal funding necessary to offset the costs of repairs. The Department of Housing and Urban Development refused to increase its subsidies to the District of Columbia because the city had been found in violation of several federal regulations.[246] The federal government supported the NCHA and shielded it from local regulations in the 1940s. By the 1970s, a federal government that operated with a significantly different mission instead punished the NCHA, which had become another arm of the municipal government. In 1979, Robert Moore, who had been hired to write a confidential report on the state of public housing in the District of Columbia to Marion Barry, who was then serving his first term as mayor, ranked Lincoln Heights as the worst project in the District in terms of structural deterioration. Those problems, of course, were not new, but instead were produced by the pressures of the shifting soils, uneven terrain, and heavy rainfall on the materials used at the site. The modified landscape that the NCHA's contractors built could not overcome all of the environmental constraints of hilly, deforested, and waterlogged Lincoln Heights.

[246] LaBarbara Bowman, "Public Housing in Decay," *The Washington Post*, August 17th, 1979.


LaBarbara Bowman, "Public Housing in Decay," *The Washington Post*, August 17th, 1979.

Conclusion: Lincoln Heights and the Legacy of Siting and Materials in Wartime Public Housing Complexes

Seven years after Lincoln Heights opened, officials from the federal agency tasked with monitoring and inspecting former wartime housing projects noticed some of the structural failures plaguing Lincoln Heights. James Prescott brought these issues to the NCHA Executive Board several times, to no apparent avail. In the 1970s, visitors noted water pooling in the basements of some of the apartment buildings. Attempts to completely rehabilitate the structures in 1970 and 1971—twenty-five years after the buildings opened—failed to redress the severe structural failures that the contractors did their best to deal with in 1945. The problems with Lincoln Heights persisted in part because of the uneven and rainy landscape and because of the ways that environmental pressures destabilized the materials that the NCHA's contractors used. Those materials were not replaced until the 1970s.

Construction managers at Lincoln Heights saw the soil and water as problems that the NCHA should have examined and addressed. The engineers believed that testing the soil and water flow in the area might help them design foundations or structures that were more suitable given the environmental proclivities of the Lincoln Heights site. Homer J. Smith called for tests of the soil and water to be conducted prior to laying the permanent

foundations for some of the complexes. But it is unclear whether or not those tests were performed, and therefore the contractors may have used foundations that were not suited for the landscape of Lincoln Heights. Indeed, cracks in the apartment buildings' walls, flooding, and other such problems related to faulty foundations were observed by visiting bureaucrats, inspectors, and residents themselves throughout the subsequent thirty years. Although Smith hoped a solution to the environmental hazards of the site could be fixed with appropriate materials and building practices, the NCHA's leadership faced pressure from the USHA to build quickly. Ultimately, it compromised the long-term stability of its complex for the aesthetic features and surroundings that Ihlder valued. The envirotechnical obstacles of the site as well as the relationship between the local hydrology and substandard materials diminished the quality of the Lincoln Heights complex. The NCHA created a new landscape that was susceptible to envirotechnical failures, as the human-built components of the landscape interacted poorly with the modified topography and natural patterns of rainfall at the site.

The history of Lincoln Heights matters for a few reasons. First, the project was one of the first executed under the Lanham Act, which provided funding and a clear mission for the National Capital Housing Authority. John Ihlder must have been appreciative of his Authority's new access to the money, capital, and support from the federal government to execute his vision for proper housing across the city. Ihlder found that he now had the ability to build proper housing in beneficial surroundings on a metropolitan scale. Lincoln Heights was supposed to be model low-income housing located in a picturesque section of Northeast Washington. Unfortunately, however, the NCHA was unable to confront the combination of grading at the site and the flow of water, or build the complexes, in ways that ensured their long-term stability.

Second, Ihlder was able to build his projects in the nation's capital. Lincoln Heights and the other early housing projects could prove to be models for public housing across the country. Despite lacking much of the industrial development that fostered insalubrious and dangerous conditions for impoverished urban dwellers, Washington clearly had many of the same problems of sanitation, clean water delivery, degraded and unsafe housing stock, and pollution that other major US cities faced in the early twentieth century. Ihlder hoped to provide housing that defied these conditions in order to

demonstrate not just the city of Washington's ability to overcome late-industrial era blight but that of the entire country. To Ihlder, Washington, D.C.'s public housing program was a synecdoche that stood for the rest of the nation's ability to build clean, livable cities for all, regardless of income or social position.

But Lincoln Heights, one of the city's earliest public housing complexes, was not a success. It fell apart, and in doing so it represented, in part, the ways that an envirotechnical system can operate in unintended and—given the prevailing economic situation of the NCHA in the mid-1940s—unfixable ways. Despite warnings from construction managers, Lincoln Heights was finished and opened to occupants who faced frequent flooding, crumbling concrete, eroded slopes, and a host of other issues stemming from the physical location of their apartments. The history of Lincoln Heights clearly shows the extent to which envirotechnical obstacles stemming from siting—and the transformation of a site—mattered in the history of Washington's public housing program. In this case, the soil, hills, and water of the Lincoln Heights neighborhood worked to erode the foundations of the apartments that Ihlder and the rest of the NCHA earnestly hoped could lift residents out of blighted communities. Instead, the structures worked to keep residents in unsafe and unsanitary living conditions.

Lincoln Heights and Barry Farms both reveal similar patterns in the history of the NCHA's early public housing program. Both required significant interventions on the Authority's part to rearrange and re-grade the landscape. In both cases, the NCHA contended with the countervailing forces of increased funding to build housing on a large scale and a powerful federal government demanding the rapid completion of projects. This meant that the NCHA built sprawling complexes across land that was stripped of many of its trees and graded to the best of the Authority's ability. In neither case, however, were the District of Columbia's inspectors allowed to visit the complexes and ensure that the buildings were in conformity with the best practices that the city government mandated. These factors combined to increase the envirotechnical obstacles that the NCHA's contractors faced during construction. Ultimately, those obstacles were built into the NCHA's envirotechnical system at Lincoln Heights and Barry Farms. They became features that over a fairly short period led to the decline of the quality of the public housing stock at Lincoln Heights and Barry Farms. The landscape, as well as the

interactions between the materials used in the complexes and their interactions with the local environment constrained the envirotechnical system in significant ways, preventing it from supporting decent, safe, and sanitary housing.

The environmental obstacles that the NCHA's contractors faced while building Lincoln Heights would remain forceful actors in the later history of the complex. Only seven years after Lincoln Heights opened, a PHA inspector noticed that there was a possibility of rainwater seeping into the gypsum roofing. The NCHA's contractors had contended with that problem while they were building the complex. The slopes around Lincoln Heights continued to erode during heavy rainstorms. Retaining walls cracked and concrete spalled as the ground underneath the structure continued to settle and shift for years after the NCHA's work at the complex.

One significant outcome of the Lincoln Heights project was the concentration of over four hundred African American families in a deteriorating housing complex. This was also the outcome for Barry Farms. It could well indeed have been the outcome for housing complexes across the eastern portion of the District of Columbia. Both Barry Farms and Lincoln Heights reveal the different forces that constrained the NCHA's ability to house impoverished African American residents in decent, safe, and sanitary dwellings. The Authority was able to build on a large scale and rehouse hundreds of families across eastern Washington, D.C. It transformed the landscape and used various building materials to erect housing that conformed to Ihlder's idea of proper housing. Soon after it finished building Lincoln Heights, however, the complex began to deteriorate. Hundreds of families were stuck in subpar homes that only continued to decline, as the NCHA faced tightening budgets throughout the 1950s and 1960s. The environmental obstacles that the NCHA encountered at its complexes actively undermined the health and welfare of its African American residents.

Chapter Five

The Dangers of Sub-Optimal Materials: Fire Ravages Highland Dwellings, 1941-1966

Barry Farms, Lincoln Heights, and Highland Dwellings all demonstrate the significant envirotechnical obstacles that the NCHA encountered during and after the Second World War. Construction efforts included not just digging foundations and putting up walls, but also reshaping the landscape in order to support large housing developments on what was once a rolling terrain. That process put in motion many of the difficulties that contractors and later residents would face as a consequence of the complexes' siting. Adding to the stress on the public housing units was the use of substandard materials. Without stronger and more suitable materials, environmental stresses emerged to substantially damage the public housing structures. This was also the case for Highland Dwellings, which is the focus of this chapter. Highland Dwellings demonstrates the immediate dangers posed by the failure of manufactured components within an envirotechnical system. The complex was ravaged by a series of fires between 1942 and 1966 that claimed over a dozen residents, injured many more, and destroyed many of the tenants' possessions. While Lincoln Heights and Barry Farms certainly deteriorated quickly, Highland Dwellings represents an even more rapid decline due to the envirotechnical constraints of the materials available to the NCHA. Even after wartime restrictions on the availability of materials abated, the NCHA continued to rely on outdated and dangerous components that failed to mitigate several fires, which themselves claimed many lives.

Both environmental and urban historians have traced the history of fires in industrializing cities. Their work reveals that fires have served as opportunities for the redevelopment and reconstruction of urban environments with safer materials and designs. First, because they have been destructive, violent, and large in size, fires in industrializing cities have prompted important political and economic responses. In the aftermath of large fires, politicians and urban reformers sought to rebuild cities in order to mitigate their future threat.[247] Fires, although devastating, were also opportunities for

[247] Much of the edited collection *Flammable Cities: Urban Conflagration and the Making of the Modern World* focuses on large urban fires in the mid-nineteenth century. Industrializing cities around the

reconstruction along safer and more durable lines. Those designs could also shape the development of cities. Little Hell, an Italian enclave in Chicago, was left out of the city's late-nineteenth century fire plan. Hence, it was built with shoddier materials, and did not conform to the city building code, which gave rise to many of the negative environmental problems associated with tenement neighborhoods. In turn, the threat that the built environment of Little Hell posed to residents' health and wellbeing was used to justify the Chicago Housing Authority's decision to demolish the neighborhood and build Cabrini Green in the 1940s.[248]

Second, fires prompted technological improvements in building construction and design. In *The Fireproof Building: Technology and Public Safety in the Nineteenth-Century American City* Sara Wermiel describes on the different construction materials that architects and engineers began to use in response to the spate of fires that engulfed industrializing cities across the United States during the mid-nineteenth century. Wermiel too emphasizes how fireproofing was a largely successful response to the environmental hazards posed by fires in densely populated neighborhoods built with flammable materials.[249] Thus historians who have studied urban fires have largely focused on the responses they provoked. In the case of cities in the United States, most were able to effective plan and design city neighborhoods during the late-nineteenth and early-twentieth centuries that prevented devastating sprees of large fires.

Highland Dwellings provides an example of what happened when a municipal agency was unable to respond to major fires. As demonstrated in the previous chapters, public housing construction consisted of more than just erecting homes in the 1940s and 1950s. The NCHA built a new envirotechnical system; it planned on the level of the

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world faced situations that—in the wake of population increases and little support for metropolitan planning previously—gave rise to catastrophic fires. In their wake, cities began to plan for disaster by writing new building codes, planning new road construction, funding firefighting units, and separating industry from commerce and residential neighborhoods. Simply put, fire provoked cities to modernize in several ways. See Greg Bankoff, Uwe Lübken, and Jordan Sand, editors *Flammable Cities: Urban Conflagration and the Making of the Modern World* (Madison: University of Wisconsin Press, 2012); Andrea Rees Davies, *Saving San Francisco: Relief and Recovery After the 1906 Disaster* (Philadelphia: Temple University Press, 2011).

[248] Lawrence J. Vale, *Purging the Poorest: Public Housing and the Design Politics of Twice-Cleared Communities* (Chicago: The University of Chicago Press, 2013), 157.
[249] See Sara Wermiel, *The Fireproof Building: Technology and Public Safety in the Nineteenth-Century American City* (Baltimore: The Johns Hopkins University Press, 2000).

neighborhood to transform an agricultural landscape into an urban neighborhood over the course of just two or three years. Yet that system was built with faulty components. The substandard fireproofing within Highland Dwellings threatened the lives and property of its residents, and led to several deaths. Rather than representing an opportunity for change at the complex, the NCHA continued to manage Highland Dwellings as if nothing had happened. In the end, Highland Dwellings represented what happened when fire did not serve as a chance to safely rebuild a neighborhood.

The Highland Dwellings complex was built for white residents, but became predominantly African American over the course of the 1950s, following the integration of NCHA projects in 1953.[250] The ways that the landscape and materials used within Highland Dwellings undermined the quality of housing for white residents suggests that the environmental injustices and failures of Washington's public housing program sometimes affected working-class whites as well. But from the 1950s forward, as white tenants moved from Highland Dwellings into their own enclaves, African Americans increasingly bore the burdens associated with substandard materials in and around the complex. The NCHA, in turn, was not able to do much to stem the tide of deterioration and decay at its complexes. African Americans were left to bear the burdens of poor housing on sensitive sites. In the case of Highland Dwellings, one such burden was fire.

Siting Highland Dwellings: The Rugged Terrain East of the Anacostia

Highland Dwellings was built to house white workers and their families. Images of the site reveal that most of the buildings in the complex were similar in appearance, consisting of a number of separated two-story buildings neatly plotted across several acres in Southeast Washington. Unlike Barry Farms, Highland Dwellings was fairly distant from the Anacostia River, and was therefore further from the industrial activities

[250] Soon after integration at Highland Dwellings, the project grappled with white flight. One statistic put forward by the National Capital Housing Authority in 1962 showed that in June of 1952, Highland Dwellings was completely segregated, housing 350 white families. By October of 1959, the number of white families had declined to 108. The number of black families more doubled those of whites at 226. See: "Statement of Walter E. Washington, Executive Director, National Capital Housing Authority, Before The United States Commission on Civil Rights, April 13th, 1962"; Folder "Question as to Need for Regulations to Provide for the Nondiscriminatory Use of Housing Facilities P. 1-140, Entry P 101: Transcripts of Hearings on Nondiscriminatory Housing and Homes Improvement Regulations, RG 351, NARA.

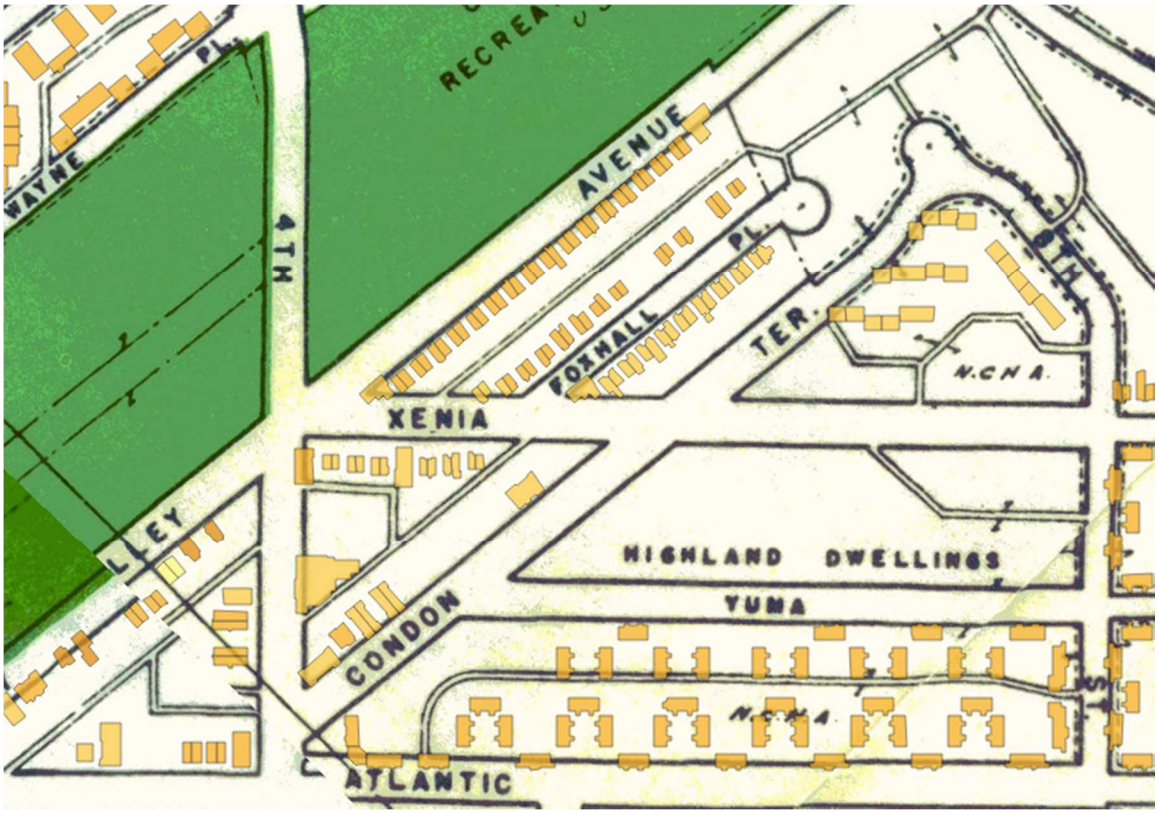
taking place in the Navy Yard and at the Bolling Naval Air Station. Likely Highland Dwellings was planned for commuters who drove into jobs downtown, primarily at the Navy Yard. When construction started, the site on which the complex was located was far removed from the more populated and developed sections of the District of Columbia.

Rear view of one of the courtyards at Highland Dwellings. Gottscho-Schleisner, Inc.,, "Highland Dwellings, Washington, D.C. Refuse arrangements," April 28th, 1944. Available at the Library of Congress website, https://www.loc.gov/item/2018743287/ (accessed November 29th, 2019).

The Highland Dwellings Administration building. Note how the land clearly slopes from the right-hand side of the image to the left. Gottscho-Schleisner, Inc., "Highland Dwellings, Washington, D.C. Administration building," April 28th, 1944. Available at the Library of Congress website, https://www.loc.gov/item/2018743292/ (accessed November 29th, 2019).

Much like Barry Farms, the Highland Dwelling site was regraded to support several houses built on what were once rolling hills and valleys. As evidenced by Barry Farms and Lincoln Heights, large structures block the natural flow of water to its lowest point. From the northeast corner to the southwest corner of the complex is a gradual slope of thirty feet (from 176 to 146 feet) over the course of 1,776 feet. In other terms, the area on which the Highland Dwellings was built is on a slope with a 1.7% gradient. While not significant at first sight, and barely noticeable to residents, visitors, and drivers alike, that gradient still matters for the flow of water. When it rains on the complex, the water follows a southwesterly course until it eventually empties into Oxon Run, an urban creek to the northwest of the complex, and then into the Potomac River.

Topographical map of the Washington Highlands complex. The blue lines represent ten-foot changes in elevation from the highest points on the right to the lowest to the left. Screenshot taken from the District of Columbia Geographic Information System, "Topography-10 Foot Contours," courtesy of the District of Columbia Open Data Project, https://opendata.dc.gov/datasets/topography-10-foot-contours?geometry=-77.006%2C38.830%2C-76.991%2C38.833 (accessed November 29th, 2019).



1958 Zoning Map of far Southeast Washington, D.C. The green patch shows the route of Oxon Run Park, which was managed by the National Park Service. Highland Dwellings is located in the bottom-right corner of the image. 6thStreet SE meets Atlantic Avenue in the bottom-center of the image. District of Columbia Office of Zoning, Historic Zoning Viewer, 1958, http://maps.dcoz.dc.gov/HistoricZoning/ (accessed November 29th, 2019).

More revealing of the topographical realities that planners faced at Highland Dwellings is the landscape immediately surrounding the complex. For example, the slope from the southwestern corner of the complex to Oxon Run begins at a height of 146 feet

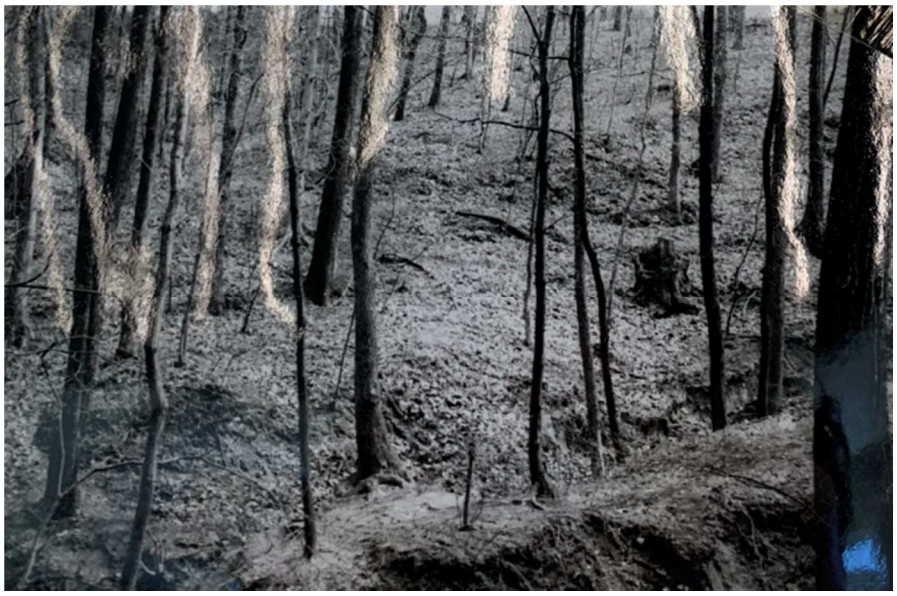
(the lowest elevation of Highland Dwellings) and descends to 58 feet at the basin of the creek. The ground therefore slopes 10.5 percent from Highland Dwellings to Oxon Run. In other words, Highland Dwellings sits atop a hill in Southeast Washington. Despite the advantages of that site for drainage as compared to, for example, Barry Farms, the site does slope from the northeast to the southwest. Furthermore, the land descends rapidly downward over just a few hundred feet in most directions away from Highland Dwellings. Indeed, the site had to be landscaped in order to accommodate the public housing complex.

As with Barry Farms and Lincoln Heights, the NCHA graded and terraced the Highland Dwellings area to conform with its idea of ideal housing in appropriate surroundings. This was part of the Authority's attempt to build a new envirotechnical regime at the Highland Dwellings complex. The planners and builders of the project hoped to rearrange and alter the landscape in order to give the appearance of middle-class domesticity. Part of this process was clustering buildings together in order to match the rowhouses that were being erected at the same time in more prosperous parts of the District of Columbia to the west. The spacing of those buildings, however, along with the construction practices and materials used would eventually contribute to the spread of fire. The NCHA sought better housing aesthetically, but also created a layout that would hasten the decline of the complex, while endangering its residents. The burden of the envirotechnical obstacles at Highland Dwellings would be borne primarily by its white, low-income tenants. After integration and the concomitant shift in the complex's demographics, that burden would be borne by the complex's impoverished black residents.

In order to assess the properties at Highland Dwellings and to get a sense of the scale of work that would be necessary to transform the site, the National Capital Housing Authority hired Francis LeBaron Smoot, a local real estate agent and appraiser.[251] The

[251] Smoot's appraisal report might be the most substantial textual record he left behind. A city directory from 1914 lists a "Francis Leb. Smoot" as having a real estate office at 706 H Street NW. See *Boyd's Directory of the District of Columbia* (R.L. Polk and Company: Washington, D.C., 1914), 1569. Furthermore, Georgetown's Oak Hill Cemetery lists a "Francis Leb. Smoot" as buried at lot 129, having lived from 1883 until 1960. Chronologically, it makes sense that the Smoot buried in Oak Hill Cemetery and the one listed in Boyd's Directory are the same, since Smoot would have been a 31-year-old real estate manager in 1914. For the cemetery listing, see Oak Hill Cemetery Website, Explore, "Smoot, Francis LeBaron",

Authority had initiated the same process for Lincoln Heights and Barry Farms, but Smoot decided to publish his report with his name included, as opposed to the other appraisers. His report reveals that the terrain of the Highland Dwellings site was uneven. Smoot divided the plot into thirty-four distinct parcels, which varied in size from 4,125 square feet at the smallest to 378,225 square feet, or 8.68 acres at the largest. The total size of the plot was 847,032.6 square feet, or a total of about nineteen-and-a-half acres. This made Highland Dwellings a medium-sized wartime development. Barry Farm was 32.7 acres, while Lincoln Heights was 14.5 acres.[252] The tract on which Highland Dwellings was located was topologically varied, with sudden changes in grade common across the plot as a whole.



https://www.oakhillcemeterydc.org/app/themes/oakhill/assets/records/129.pdf (accessed November 29th, 2019). This was not the same Smoot who commented on rainfall in Barry Farms in chapter three.

[252] "Book #1 Appraisals DC-1-9 Washington, DC.", Box 5, Series: Land Acquisition Project Files USHA, DC-1-9 (Washington DC) to DC-1-16 (Washington, DC), RG 196, NARA II; "Appraisal Report, Lincoln Heights"; Box 5, Land Acquisition Project Files USHA, DC-1-9 (Washington DC) to DC-1-16 (Washington, DC), RG 196, NARA II.

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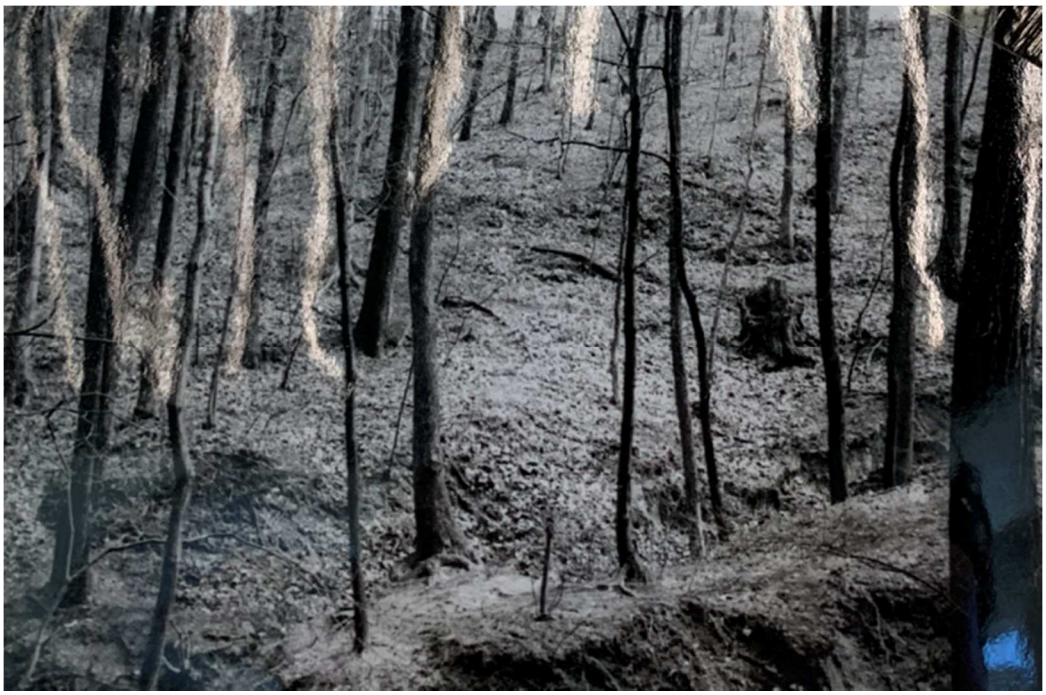

All images taken from Smoot's original appraisal report. Hillside Dwellings, DC-1-13, December 16th, 1943; Folder "Site Approval Sheet Project D.C. 1-13," Box 5, Series: Land Acquisition Project Files USHA, DC-1-9 (Washington DC) to DC-1-16 (Washington, DC); RG 196, NARA II.

The photographs above depict four different parcels on the Highland Dwelling tract. The landscape was dotted with hills and sharp ravines. Without a good deal of landscaping, grading, and leveling, the site would not be suitable for the scale of

development that the NCHA executives had in mind. In the first and third pictures, especially, the unevenness of the land is apparent, as the landscape slopes generally upward from creeks that had carved ravines across the site. The NCHA would also have to strip many of the trees on the site. Past episodes of deforestation had resulted in a good deal of soil loss and the siltation of the Anacostia River.

The Washington Highlands area was even more sparsely populated than the communities that existed before the Barry Farms and Lincoln Heights projects. The appraiser lists only one property on the site, a two-story, six-room, approximately sixty-year-old farmhouse with electricity but no indoor plumbing. This farmhouse sat on the largest of the parcels that Smoot listed, and the property in total consisted of over 8.5 acres. The appraiser listed the property as being in fair condition, which was meant that the structure was suitably decent, safe, and sanitary, while perhaps a bit shabby. The report reveals that indeed the condition of the land itself may have been an impediment to the more concentrated development of the Highland Dwellings site, riven as it was with hills and valleys.

As with Barry Farms and Lincoln Heights, the Highland Dwellings site needed modifications before it could support housing on the scale that Ihlder and the NCHA sought. For example, in his brief notes on the slope and elevation of the site, the appraiser noted that for parcels twelve through sixteen, the land was "from 20 to 40 feet in the hole." The appraiser went on to note that for this plot of land, which constituted just more than 52,000 square feet or 6.16 percent of the total area, it would be extremely difficult for the builders to turn the property into the simplified and level space that the National Capital Housing Authority sought. According to the appraiser, it was "[e]xtremely difficult to sell property of this type that must be filled in. Not buildable land." Though that was the appraiser's pointed comment on the quality of the site, he also noted that for parcels five and six, which constituted 2.22 percent of the total property, he devalued the land from front to back as it sloped towards a ravine. Smoot measured that ravine as being 150 feet long, 40 feet across, and 12 feet deep. The ravine ran through parcel number 2, which constituted 6.77 percent of the total property, and Smoot decided to lower the value of that plot as well. Finally, for parcels 18 through 30, constituting 29.15 percent of the total area of the site, the appraiser noted that the land had a 3-4 percent

grade, which again lowered the value of those plots relative to the level ground on the site.[253]

All together, the appraiser's data showed that the Highland Dwellings site was fairly uneven terrain. 8.38 percent of the entire plot was extremely varied in elevation, and the appraiser made it a point to warn the ADA about the conditions of those plots. A further 29.15 percent of the property was fairly uneven and had a noticeable slope. Taken together, more than one-third of the property was uneven, not to mention the fact that land around the perimeter of the site sloped downhill very quickly. As evidenced in previous chapter, the NCHA had struggled with erosion on the slopes throughout its wartime properties. Smoot himself offered a generally positive description of the landscape, claiming that 88% was buildable while 12% was not.[254] He was straightforward about the largest impediments to construction at the site, including the gullies and ravines that ran through the property. Regardless, to transform the landscape to support housing on a large scale, the NCHA would have to make several interventions in the extant layout and grading of the site.

In his report, Smoot highlighted three reasons why private developers would not want the land. The first reason was economic: the federal government already possessed the land to the north of Highland Dwellings. The National Park Service owned and maintained Oxon Run and its banks for several feet on either side, and the steepness of the ravine and the size of the creek made it largely impractical for construction purposes.[255] The second and third points that Smoot raised about the impracticality of the site for private development were related to the local environment. Private developers were having problems figuring out how to lay sewer lines through the Washington Highlands. The different elevations at the location as well as the problem of the ravines

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[253] The quotes from this paragraph come from one source: Folder Project DC-1-16 Appraisal by Francis LeB. Smoot, undated. Box 6--Records of the Field Offices, Land Acquisition Project Files USHA, DC-1-16 (Washington DC) to DC-1-17 (Washington, DC), RG 196, NARA II. I have not seen the curious expression "in the hole" used in the other two appraisals for Barry Farms and Lincoln Heights, which I suspect was a distinctive expression that Smoot employed. This may be because although he assisted on the Barry Farms appraisal, Smoot was the lead author for this particular report. I take the expression to mean that there was a ravine or depression crossing those plots..

[254] Ibid.

[255] For this information and the figure below, see District of Columbia Department of Zoning, "Historic Zoning Viewer," 1958, http://maps.dcoz.dc.gov/HistoricZoning/ (accessed September 1st, 2019).

and gullies complicated the construction process, since the landscape consisted of several irregularities in elevation.[256] It would be up to the NCHA's planners and engineers to re-grade the site in order to connect it to the larger envirotechnical system of Washington, D.C.

The most revealing point that Smoot made in his comments to the NCHA was about 8th Street, SE. While writing about the uneven terrain of the site, Smoot noted that on the maps then used by NCHA planners: "[w]hereas 8th is a dedicated street it is actually a gully, which would be very costly to bring up to the approved grade which is taken from the topographical map made by the Geodetic survey of 1892. The storm water in that approximate 60 years, has undoubtedly caused further erosive in 8th street [sic]."[257] Smoot's note was revealing for two reasons. First, he explains that the NCHA was relying on outdated maps from fifty years prior. The 1892 map showed a paper street—a planned route that had not in fact been built—that was in fact a large gully. Smoot's work helped reveal what the landscape looked like. He did the necessary fieldwork while assessing the cost of acquiring the site. His observations showed that the soil in parts of the Highland Dwellings site was uneven and susceptible to erosion even before the NCHA's work. Once again, the site acted as a potential envirotechnical obstacle to the successful construction of decent, safe, and sanitary housing.

The historical record reveals far more, however, about the dearth of appropriate materials available to the NCHA. As the Second World War ended and the United States supported Europe's recovery, domestic building materials were scarce. Yet at home the flood of workers into production centers and returning veterans placed a severe strain on the existing housing stock. The NCHA had to build quickly to accommodate the needs of homeless or underhoused Washingtonians. Once again, the NCHA found itself with an increased mandate at the same time that the materials available to it were reduced. This combination of factors gave the envirotechnical system at Highland Dwellings a degree of instability as natural phenomena—in this case, fire—imperiled the lives and property of the complex's residents.

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[256] Folder Project DC-1-16 Appraisal by Francis LeB. Smoot, undated. Box 6--Records of the Field Offices, Land Acquisition Project Files USHA, DC-1-16 (Washington DC) to DC-1-17 (Washington, DC), RG 196, NARA II.
[257] Ibid.

Building Highland Dwellings: The Material Obstacles to the NCHA's Construction Program, 1943-1946

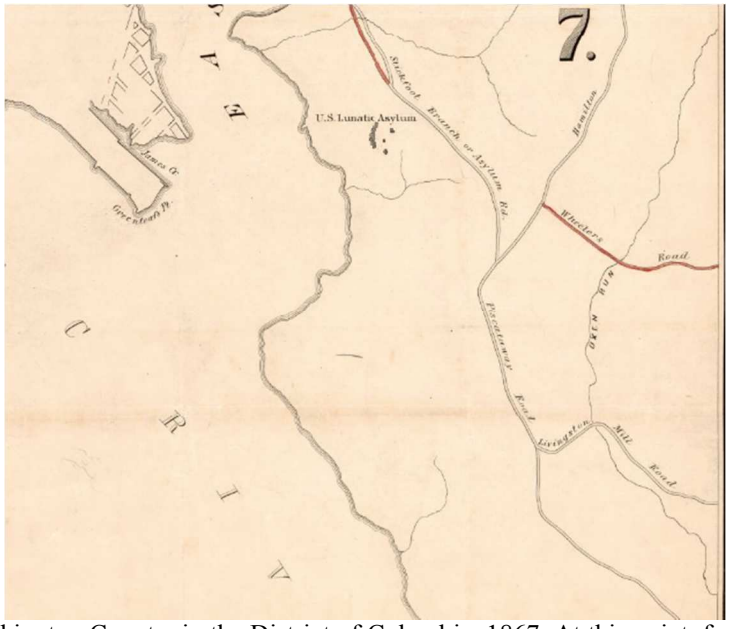
In a site description assembled by the Public Housing Authority for internal circulation, one employee noted that "[t]he site is geographically centrally located in a Negro neighborhood at the focal point of a radiating street system. It is well situated at a relatively high elevation which will lend itself to both good circulation of air in the summertime and proper drainage of surface water during inclement weather."[258] This comment, released after the appraiser's report was made available to the NCHA, runs against some of the commonly accepted knowledge within the NCHA. In the past, Ihlder had referred to hilly sites as undesirable for private development. Far removed from the downtown core, and consisting of confusing property lines, the rugged conditions of eastern Washington D.C. reduced interest among private homebuilders. The NCHA, on the other hand, was able to quickly acquire and built on those terrains because it had the capital and federal mandate to do so. The PHA, of course, was not involved in the construction of NCHA housing. It merely provided low-interest loans for the NCHA to carry out its mission. Thus, the PHA's description might have been incorrect. Furthermore, according to the appraiser's report, the neighborhood in fact consisted of a single home and in at least one case included a road that existed only on a map.

During the Second World War, housing planners continued to emphasize the deep connections between housing and its surroundings. They sought the wide spaces of undeveloped land with few private homes on the eastern sides of the Anacostia and Potomac Rivers in order to build homes and neighborhoods. Yet, the shortage of critical materials; the problem of siting and the necessary transformation of the landscape to support middle-class standards of domesticity; the interactions among the land, air, and water on those sites; and the fast pace of construction hindered the public housing program in eastern Washington, D.C., from the beginning. The envirotechnical obstacles pertaining to siting and materials that were first identified by site managers at Lincoln Heights persisted through the construction process at Highland Dwellings. Ultimately the

[258] Hillside Dwellings, DC-1-13, December 16th, 1943; Folder "Site Approval Sheet Project D.C. 1-13," Box 5, Series: Land Acquisition Project Files USHA, DC-1-9 (Washington DC) to DC-1-16 (Washington, DC); RG 196, NARA II.

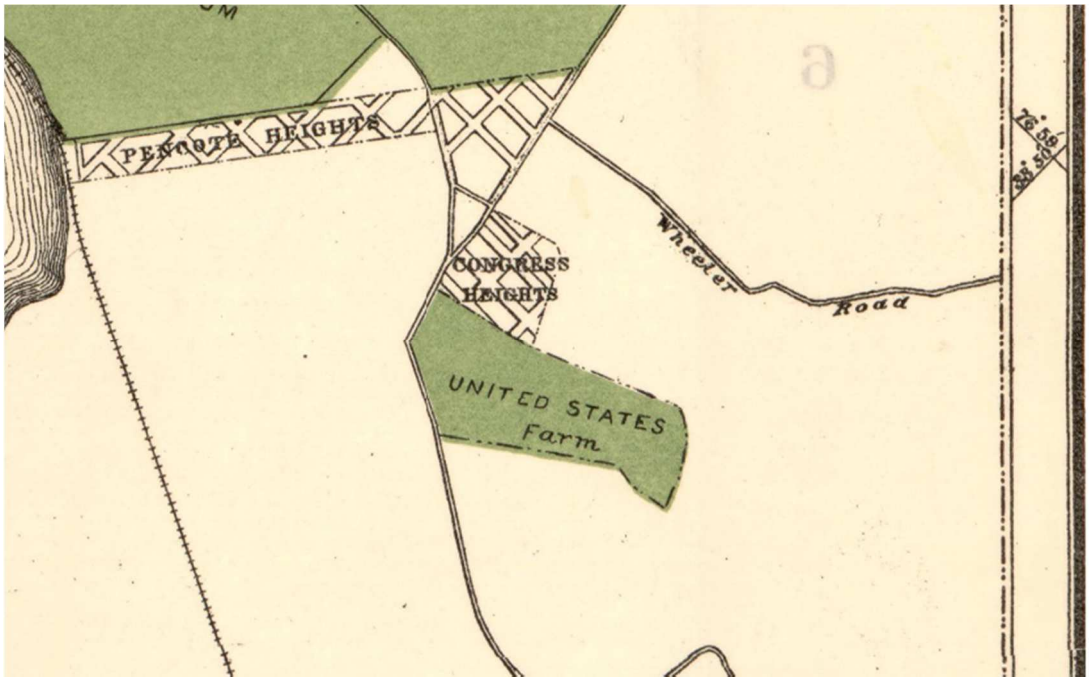
planning process set in motion construction practices that made Highland Dwellings more of a liability than a benefit to many of its residents.

As for the initial question about why Highland Dwellings had originally been intended for white workers, it might be helpful to consider the larger developmental history of eastern Washington, D.C. Development in the eastern part of the County of Washington and, after 1871, the City of Washington had been haphazard except for those parcels first administered by the Freedman's Bureau and in Uniontown. Take, for example, the following maps, showing the development of the area around Highland Dwelling from 1867 until 1950. Particular attention should be paid to roads and physical structures in this small corner of Washington. Wheeler Road SE has been placed in the upper- to mid-right of each image for reference.

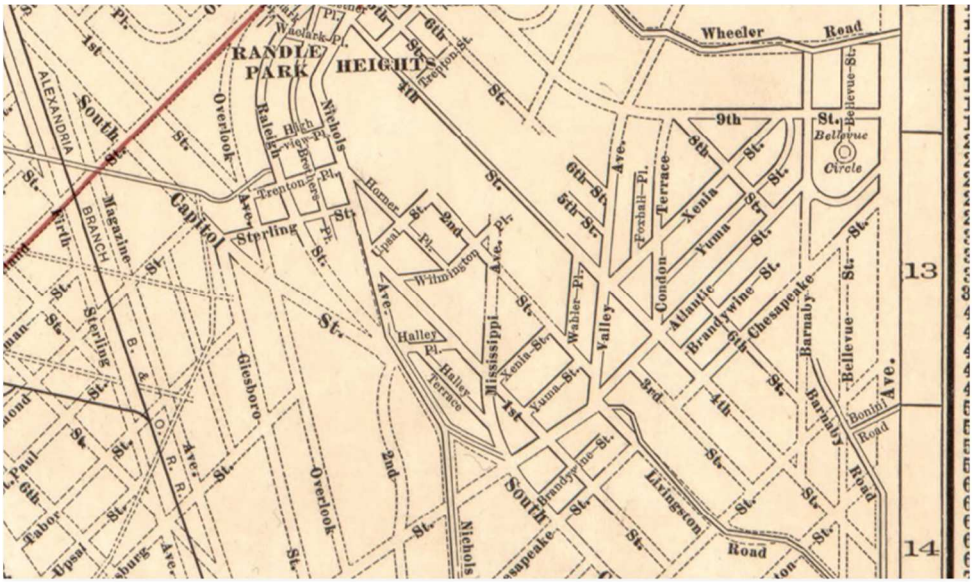


A road map of Washington County, in the District of Columbia, 1867. At this point, few roads run through far Southeast Washington, indicating the low degree of development in the region. At this point, Southeast Washington was undergoing a major transition in land ownership, as many of the former estates were being turned over to newly freed slaves, as detailed in chapter two.[259]

[259] District of Columbia, Office of the Surveyor, "Map of the Roads in Washington County, DC," 1867, https://www.loc.gov/resource/g3851p.ct004799/?r=0.426,0.466,0.576,0.288,0 (accessed September 1st, 2019).



This map shows suburban developments in far Southeast in 1895. There is obviously a greater degree of development than in 1867, with two neighborhoods clearly named. Still, much of the map is blank, indicating the sparse development outside of those communities.[260]

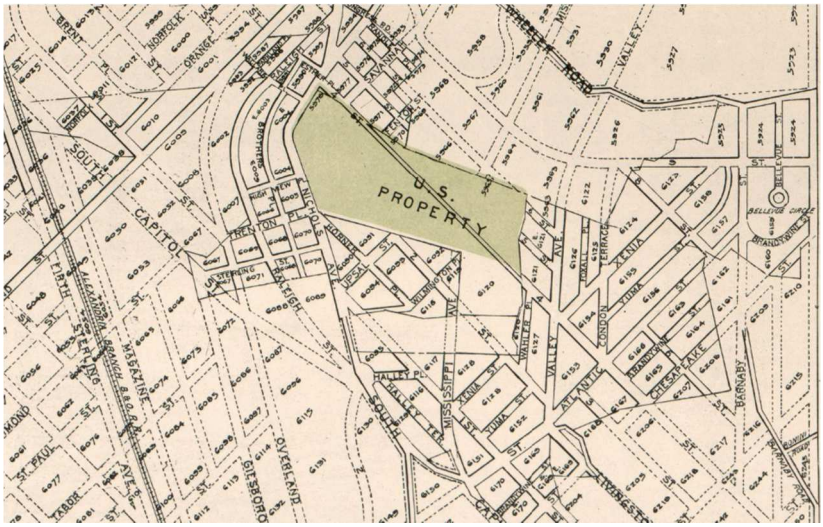


This map, from 1915, shows yet more development in Far Southeast. It is aspirational, however, since most of the roads to the east of Nichols Avenue, which runs a crooked route from north to south towards the

[260] District of Columbia, Engineering Department, "Map Showing Suburban Subdivisions of the District of Columbia," 1895, https://www.loc.gov/resource/g3851g.ct004691/?r=0.711,0.529,0.253,0.126,0 (accessed September 1st, 2019).

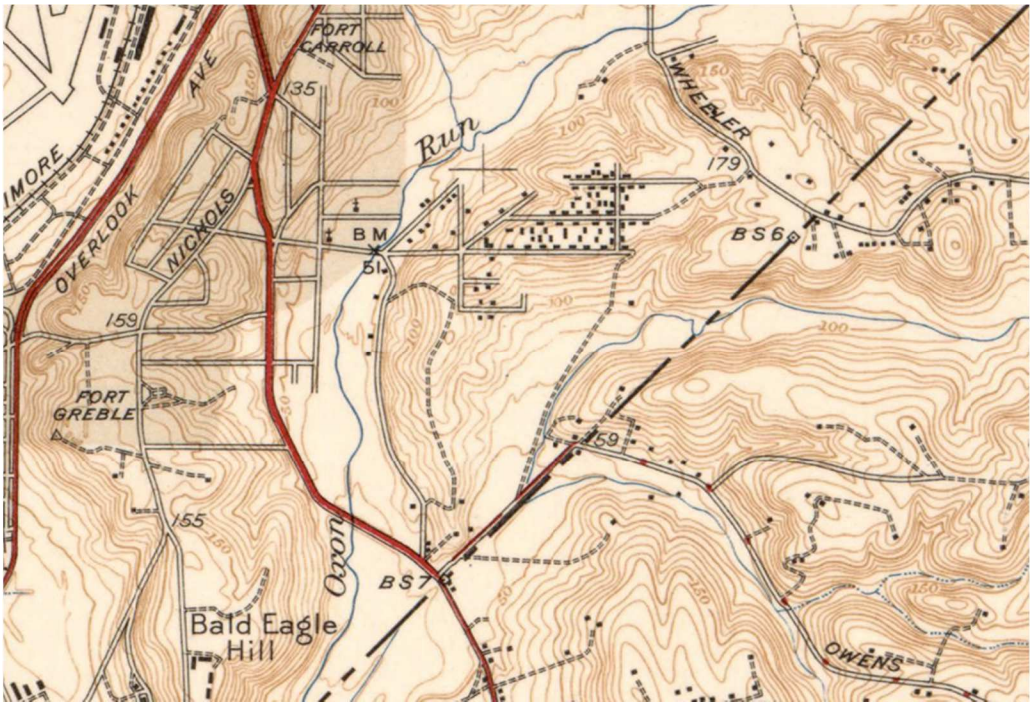
center of the map, are dotted, rather than solid lines. This indicates that those roads were planned, but not yet built.[261]

As evidenced above, in the twenty years between 1895 and 1915, surveyors and planners received and recorded far more information about the street layout of Southeastern Washington. Yet, these maps tell viewers nothing about the types of streets or whether they actually exist or were merely paper streets. Also there is a large blank spot on the map upper-middle of the map where Highland Dwellings would eventually be located. This indicates that there were few—if any—residences that predated Highland Dwellings. Furthermore, the dotted streets indicate avenues yet to be built. This map is aspirational, but does show a greater degree of development east of Nichols Avenue SE.

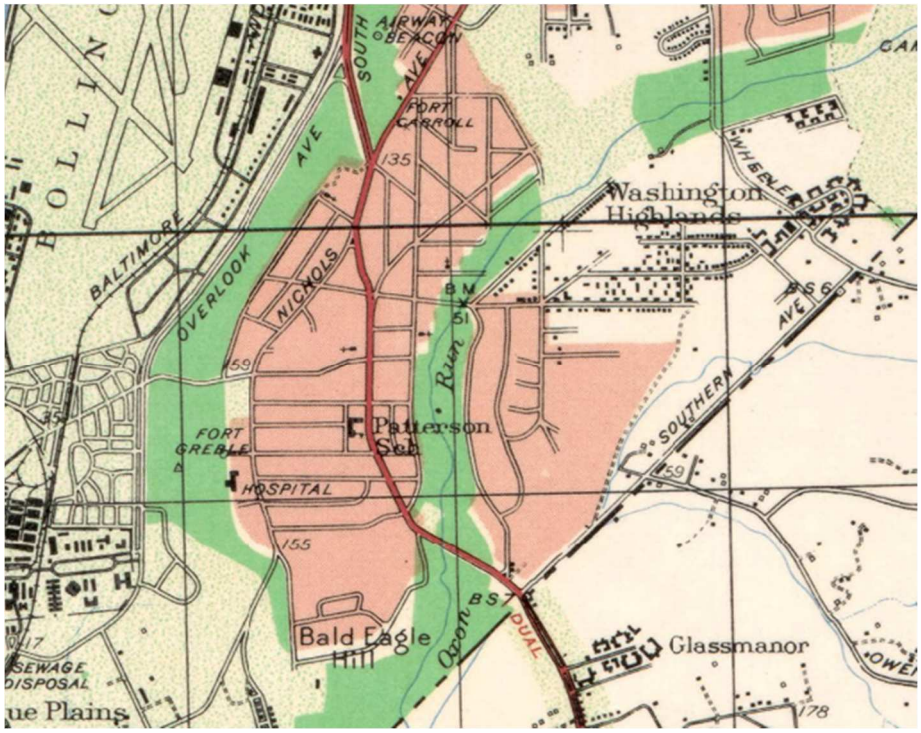


This road map from 1921 shows yet more development east of Nichols Avenue, but still shows the route of mostly planned streets in that area. The section labeled "U.S. Property" was owned by the NCPPC. Part of it would eventually become Highland Dwellings.[262]

[261] C.S. Hammonds and Company, "District of Columbia," 1915, https://www.loc.gov/resource/g3850.ct004482/?r=0.72,0.558,0.228,0.114,0 (accessed September 1st, 2019).
[262] District of Columbia, Office of the Surveyor, "Map of the Permanent System of Highways, District of Columbia," 1921, https://www.loc.gov/resource/g3850.ct004468/?r=0.525,0.399,0.749,0.375,0 (accessed September 1st, 2019).



This topographical map from 1947 shows Highland Dwellings, revealing that it was fairly isolated from the mostly white-owned homes—represented by the black squares—along Wheeler Avenue SE. Note the low degree of development in the surrounding area.[263]



[263] Geological Survey, "Washington and Vicinity, Maryland, Virginia, District of Columbia," 1947, https://www.loc.gov/resource/g3850.ct004522/?r=0.583,0.853,0.19,0.095,0 (accessed September 1st, 2019).

Once again, this 1953 map shows that there was little development in the area surrounding Highland Dwellings into the early 1950s.[264]

These maps reveal that the development of Southeast Washington proceeded at an uneven pace and was largely undertaken by individual families and communities. There was little coordination for development at the municipal level until the ADA began its work in the 1940s. Some sections of eastern Washington, D.C. grew quicker than others. Indeed, while Highland Dwellings may have been built in a predominantly African American section of the District of Columbia there were some white communities among the hills and valleys of the region. There was one such community to the east of Highland Dwellings that had been built during the early twentieth century. By 1925 there were enough residents to charter a community organization. In November of that year, sixty members attended the inaugural meeting of the Highlands Citizen Association, electing their Board of Directors.[265] Although reports from the time do not indicate the racial composition of the neighborhood, the actions that the Washington Highlands Citizens Association took in the years following the construction of Highland Dwellings strongly indicate that the surrounding neighborhood was in fact white. In 1953, for example, Ralph E. Cushman, President of the Washington Highlands Citizen Association, protested the NCHA's decision to integrate all public housing complexes.[266]

These maps help clarify the level of development at the Washington Highlands site. While there may have been a black neighborhood where the NCHA decided to build, it was fairly isolated from the rest of the city. Over the course of the late-nineteenth and early-twentieth centuries, white homeowners moved onto the higher elevations around the Highlands site. The NCHA's decision to purchase Washington Highlands was representative of a pattern; the Authority consistently built on top of black neighborhoods. They justified their decision by claiming that the neighborhoods were underdeveloped, unsanitary, or decrepit and that they should be replaced with middle-class housing. In the case of Barry Farms, the Board of Public Works and the Board of

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[264] United States Army Map Service, "Washington and Vicinity," 1953, https://www.loc.gov/resource/g3850.ct004519/?r=0.42,0.73,0.24,0.12,0 (accessed September 1st, 2019).
[265] "New Association Elects: F.M. Cannon Becomes President of Washington Highlands Group," *The Washington Post*, November 17th, 1925.
[266] "Group Fights Opening Area to All Races," *The Washington Post*, May 9th, 1953.

Public Health had consistently, throughout the early-twentieth century, tried to build sanitary infrastructures, for fear of disease outbreaks in the neighborhood. Near Lincolnville, the surrounding white residents expressed concerns about the ramshackle appearance of the black community's homes to Eleanor Roosevelt. The NCHA consistently purchased these black neighborhoods and built housing for workers on top of them that rectified both the apparent neglect of homeowners in the area and the poor conditions of housing elsewhere in the city.

The NCHA's efforts to redevelop the landscape of the Washington Highlands and other similar places in eastern Washington were means by which those communities became integrated into the larger envirotechnical networks of a modern metropolis. The NCHA overthrew the previous envirotechnical regime, which had consisted of smallholding farmers who arranged the arable land, water, and terrain to support small-scale agricultural production. It did so by purchasing those communities wholesale and demolishing its homes. The Authority then undertook the difficult work of cutting down some trees, re-grading the site, laying down new roads and pipes, and building housing. Over a very short period, Washington Highlands lost the appearance of a small farming community, and became aesthetically and physically similar to other neighborhoods throughout the city.

Anything but Fireproof: Fire Threatens Workers and Residents at Highland Dwellings, 1942-1964

Although Highland Dwellings was built on fairly uneven terrain and required terracing, the historical record does not reveal much about the envirotechnical obstacles of the site, as opposed to Lincoln Heights and Barry Farms. Many of the problems that workers and the first residents faced at Highland Dwellings were instead related to the poor quality of materials and building plans at the complex. The degree of devastation caused by several fires at Highland Dwellings was exacerbated by the construction quality as well as the NCHA's reluctance to adhere to the District of Columbia building code. Sometimes caused by accidents or faults in the wiring of some complexes, fires reflect the complex intertwinement of nature and artifice in an envirotechnical system. Although they might be caused by interactions between manufactured parts of the

system, fires quickly became natural perils to the continued stability and safety of buildings at Highland Dwellings. They spread as more oxygen fueled their growth, and they prompted the NCHA to try to respond to their frequent outbreaks at the complex. Fires were agents of physical and environmental change at the Highland Dwellings project, and necessitated responses from the leadership of the NHCA. In other words, fires were non-human agent of historical change.

In the end, the NCHA was unable to take the opportunity that the fires posed to rebuild Highland Dwellings in a safer manner. Although the fires sometimes burnt buildings in the complex to their foundations, the NCHA did very little to revisit and reassess the construction practices that made them so common and dangerous. Of course, the NCHA was hamstrung by a relatively small budget. In the case of fires at the complex, economic pressures granted a non-human agent of historical change a powerful opportunity to impinge on the Authority's pursuit of decent, safe, and sanitary dwellings. Highland Dwellings demonstrates what happens when a civil authority does not act to prevent fires. As expected, the fires wrought great damage to residents' property and lives.

The ADA hired the construction firm Jefress-Dyer to build the Highland Dwellings complex. The crew began construction in early 1942, with many of the units ready for occupants in 1943 and 1944. Since the project consisted of several stages, the ADA allowed residents to move into sections of Highland Dwellings as soon as they were complete. The first tenants moved into the complex in 1942. Those residents, however, had to contend with a dearth of basic infrastructural services. The roads leading to their homes had yet to be surfaced, and the streets did not have lighting. These two factors were burdens on a community that was built far from the central business and industrial sections of the District of Columbia, meaning that residents had to rely on their automobiles to get to and from Highland Dwellings and their workplaces.[267] Upon receiving complaints from the project's first tenants, James Randolph, a Congressman from West Virginia and then the Chair of the Subcommittee on the District of Columbia,

[267] "Families Living in Highland Dwellings Will Get Street Repairs but No Arc Lights," *The Washington Post*, May 28th, 1942.

appealed to John Ihlder to bring lighting to the neighborhood.[268] Randolph noted that most of the heads of the households at Highland Dwellings worked late shifts and needed lighting to see the unfinished road ahead of them. After these appeals, the National Capital Housing Authority prioritized the installation of lighting across the grounds of the complex. Given the scale of the NCHA's projects throughout eastern Washington, D.C. during the early 1940s and its desire to demonstrate the economic viability of a low-income housing program, the Authority likely wanted to begin collecting rents as soon as possible.

As residents moved onto the project in 1942 and 1943, construction elsewhere on the site continued apace. The frustrated contractors dealt with a deficit of reliable building materials, as had been the case at both Barry Farm and Lincoln Heights. For example, although most gutters were built with sheet metal at the time, the war effort severely constrained the amount of that material available for housing construction. Hence, the NCHA's contractors were forced to use the cheaper option—wood—for the construction of the complex's gutters.[269] The NCHA approved the use of wooden gutters on January 24th, 1944. Wood, of course, is far more flammable than sheet metal. Although it is difficult to establish a direct connection between the wooden gutters in Highland Dwellings and the propensity of the site to experience severe fires, their presence likely did not help to stop the spread of flames.

On February 14th, 1942, the first major fire occurred at the Highland Dwellings complex. It claimed no lives, but set back the pace of construction. The project was only partially occupied at the time, and no one was injured. The fire did, however, destroy the possessions of three households. The structure that burned was typical for Highland Dwellings: It was a semi-detached home with four separate units, two on either side of the main building. The fire began in an unoccupied apartment, but spread throughout the entire building and burnt the structure down to its foundations, causing severe damage to

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[268] "Rep. Randolph Backs Housing Light Pleas," *The Washington Post*, May 24th, 1942.
[269] William R. Simpson to Walter P. Hudgins, January 24th, 1944; Reading File, 8/2/43-3/31/44, NCHA Legal Division, ADC. I do not know why wood was available for the gutters at Highland Dwellings but not for the roofing at Lincoln Heights. My speculation is that less wood was needed for gutters, compared to roofing, and so the NCHA could acquire wood gutters at a cheaper price than wooden roofing.

the walls throughout the building.[270] The event went unreported in the local newspaper, and record of the fire only remains in the minutes of the National Capital Housing Authority's legal division. The accident spurred no action on the part of the legal or executive committees of the ADA. But the fire was, however, a harbinger of future disasters.

On February 29th, 1944, the NCHA entered into a dispute with Jefress-Dyer, the contractors hired to build Highland Dwellings. The dispute involved three main issues. First, Ihlder was annoyed that landscaping work had not yet been completed when tenants first began to move into some of the later buildings at the Highland Dwellings complex.[271] Of course, Ihlder had long been interested in building housing that appeared to conform to middle class standards of domesticity. The notion that public housing would not be in an ideal state when the majority of tenants moved in was anathema to his thinking as well as the general Progressive view of the relationship between housing and its surroundings. Ihlder's concerns were also about the amount of time that the contractor was taking to finish the project. He emphasized that "time was of the essence" and that the contractors should consider finishing the buildings in groups in order to expedite the work.[272] Finally, Ihlder was agitated about building nine on the complex, which had been destroyed in a fire. Of course, Ihlder was irked by the setback that the fire posed but also insisted that the cost of the destruction and reconstruction of the building be borne by the contractor, rather than the NCHA.[273] The fire that destroyed building nine would not be the last at the Highland Dwellings complex.

Between 1942 and 1966, eight major fires struck the apartments at the Highland Dwellings complex. Five of those eight fires occurred between 1957 and 1965, claiming the lives of eleven people in just eight years, as the complex increasingly housed black families displaced by urban renewal. The number of fires in Highland Dwellings was unprecedented when compared to the number of fires in other housing complexes. Deficient materials at the complex sometimes caused fires. More to the point, however,

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[270] John Ihlder to Oliver C. Winston, "Finance and Accounts," July 12th, 1943; Reading File, 2/18/1943-7/31/1943, NCHA Legal Division, ADC.
[271] John Ihlder to General Accounting Office, February 29th, 1944; Reading File, 8/2/43-3/31/44, NCHA Legal Division, ADC.
[272] Ibid.
[273] Ibid.

was that the NCHA sometimes ignored District of Columbia regulations. The envirotechnical system that the NCHA set in place in the Washington Highlands possibly included components that had not been vetted by the very agency responsible for setting and enforcing construction standards. In the end, the materials used in Highland Dwellings as well as their arrangement within the buildings would contribute to the epidemic of fires in the 1940s, 1950s and 1960s.

The first major fire after the completion of Highland Dwellings occurred in 1945. According to contemporaneous reports, the fire was set by a distraught mother, who tried to burn down her unit in order to "rid herself" of her children.[274] The *Washington Post* described Ruth Arends, the mother who set fire to her apartment, melodramatically. As a singer with the Columbia Light Opera Company, Arends suffered from not achieving "better roles with the civically-sponsored opera company," and was despondent over the bills coming in for their newborn and the low pay she received from her work.[275] Dumbfounded at the cause, the police found their answer offered in the story told by Arends, calmly, as she stood in the cold winter air in a fur coat and nightgown. Arends's actions harmed more than just her and her family's possessions; the fire also destroyed the furnishings of one of her neighbors, a Navy Yard machinist, and smoke damaged some of the possessions of the adjoining units.[276]

Well after the end of the Second World War, the NCHA took some action to try to understand the project's susceptibility to fire. In 1954, the agency hired a fire insurance company to assess buildings throughout the Highland Dwellings complex. The insurance company found that despite the three fires that had occurred at the complex, "[t]here are no sprinklers in any of the buildings and sprinkler protection is not anticipated", which indicated that the executive board of the NCHA was not considering sprinkler installation.[277] The insurance company, however, issued no recommendation that sprinklers be installed in the units. This choice may have proven fatal as Highland

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[274] "2 Children Saved in Fire; Mother Held," *The Washington Post*, January 14th, 1945.
[275] Ibid.
[276] Ibid.
[277] "Fire Insurance Inspection Report: Highland Dwellings Addition Proj. D.C. 1-16, January 6th-8th, 1954". Archives of the City, National Capital Housing Authority, Legal Division, Misc. Office Files, incl. Site Plans, Publications, etc., Box 2, Folder "Site Diagrams and Addresses".

Dwellings entered the 1950s and 1960s, when a rash of fires over just eight years claimed eleven lives.

Three years after the insurance company's assessment, another fire struck Highland Dwellings. In 1957, a fire in one of the units led to the death of two young parents. The father, James E. Thomas, died in the blaze while the mother perished during an unsuccessful rescue attempt for her six-year-old daughter and two-year old son. The daughter, Karen, had already saved her brother from the flames, although the mother had not realized this when she returned to the unit. According to Karen, "I tried to get Daddy up…but he wouldn't wake up…I couldn't get back in the house to wake up my Daddy because of the smoke and my brother would cry for me."[278] The fire was not contained to one apartment, as it damaged the two adjacent units in the building.

Investigative reporting by Connie Feeley, a staff writer for *The Washington Post* in the wake of the fire revealed to the public that Highland Dwellings did not conform to the District of Columbia building code. A District official revealed to Feeley that "[t]he public housing project…does not have the protective fire walls required by the District Building Code."[279] Although city regulations required the buildings to have a masonry firewall between units, Highland Dwellings relied solely on an asbestos sheet in between the regular wallboard. Harvey Everett, head of the Housing Management Office for the NCHA, blamed the substandard construction on the lack of critical materials available during the Second World War.[280] Although asbestos works as a fire inhibitor, given enough heat the material cannot withstand the spread of flames and damage from one unit to another.[281] In any case, the NCHA chose not to take any action at the site to rectify its deviation from the city building code. The Authority did not take the opportunity that the fire offered to reconsider its building policies or retrofit the complex to meet the city's construction codes.

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[278] Paul Sampson, "D.C. Couple Dies in House Fire; Daughter, 6, Rescues Baby Brother," *The Washington Post and Times Herald*, December 13th, 1957.
[279] Connie Feeley, "Housing Project Lacks Fire Walls," *The Washington Post*, December 14th, 1957.
[280] Ibid.
[281] By the 1970s, the public was aware of the dangers of asbestos and pressured federal regulators to respond to the public health threat. In the 1930s and 1940s, industries began to consider asbestos as an occupational hazard, but this did not become public knowledge for decades later because of the industry's tight lid on internal research. Paul Erker, "A Comparative Perspective of Asbestos as an Industrial and Environmental Hazard," *Global Environment* 7, no. 1 (2014), 72-76.

Just two months after the fire that claimed the lives of six-year-old Karen Thomas's parents at Highland Dwellings, another blaze at the complex killed a young man and his toddler son. The mother, named "Mrs. John A Crowley" in *The Washington Post*, was able to escape the flames with three of her children.[282] Fire investigators and the NCHA puzzled over the cause of the fire, but ultimately pointed to negligence on the part of the parents, who sometimes observed their three-year-old son playing with matches.[283] Understandably upset about the fires that claimed four lives and thousands of dollars worth of property in the span of two months, tenants demanded that the NCHA work to upgrade the fire prevention structures on the public housing site. James Ring, who served as the second chief of the NCHA, promised to do so in a late-February meeting with tenants of Highland Dwellings.[284]

In 1959 Everett considered using an experimental new wall coating developed in Sweden in order to combat the spate of fires. Rather than relying solely on the wall paneling and asbestos interiors, the NCHA considered using "Three-Q" wall coating, which consisted of marble dust and other ingredients mixed into a plastic binder. The binder would be spread with plaster on the walls, with a second coat sprayed on top after the first layer dried.[285] There is no record of the NCHA applying the new coating widely. Even with concrete widely available, the Authority continued to rely on asbestos sheets. Furthermore, the wall spray would have simply acted as a patch on a severely flawed envirotechnical landscape. Fires had started at units that were uninhabited during the construction process. The causes of the other fires—with the exception of that in the Arends unit—had not been conclusively determined. The materials that the NCHA had used, combined with the pace of construction, were envirotechnical obstacles to the safety of the complex. If the NCHA had used the wall coating throughout the complex, it

[282] For whatever reason, style conventions at *The Washington Post* at the time meant that the paper would name the male head of the family and refer to his wife with the same name.
[283] "NCHA Plans to Improve Fire Guards," *The Washington Post*, February 11th, 1958.
[284] "Highland Dwellings Due Fire-Prevention Action," *The Washington Post*, February 27th, 1958.
[285] "Fireproofing is Weighed for Highland Dwellings," *The Washington Post and Times Herald*, January 6th, 1959.

would have likely been an insufficient response to material problems that were embedded in the structures themselves.[286]

The fires continued into the 1960s. In January of 1961, another fire at the complex took the lives of three small children.[287] Everett responded by beginning the remodeling of units throughout the complex. He instructed the contractors to replace the existing fiberboard wall coverings with flame-resistant gypsum board—the same boards that crumbled at Lincoln Heights when exposed to damp conditions—and to install half-inch thick sheets of insulation between the walls to prevent flames from spreading to adjoining units.[288]

Despite the renovations, there were two more deadly fires in 1964 and 1965. The first claimed the life of a young girl, Mary R. Baxter, on the eve of her fourth birthday. Deputy Fire Marshall Eugene B. Davis blamed an unattended skillet left on the stove for the fire.[289] Despite the substitution of gypsum boards for the earlier asbestos fireproofing between units, the fire spread throughout the building and either destroyed or damaged the adjacent apartments. Luckily, seventeen other residents of the three adjacent units were able to escape the blaze, suffering minor injuries from smoke inhalation and damage to property.[290]

The final fatal fire at Highland Dwellings happened in late-April, 1965, just four months after the last fire in December of 1964. Once again, the victims were young children, ages 4, 5, and 11. At the time of that fire, only half of the units in Highland Dwellings had been renovated, even though nine years had passed since Everett pledged to repair and replace fireproofing materials throughout the entire complex.[291] The scene after this fire was particularly chaotic. The mother of the children had been widowed

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[286] Consider, for example, the asbestos sheeting. To make the complex fireproof the NCHA would have had to replace the sheeting with masonry walls. Even in the aftermath of several destructive fires the NCHA took no action to do so.

[287] "Highland Dwellings to be Fireproofed after 4 Fatal Fires," *The Washington Post, Times Herald*, October 22nd, 1961.

[288] Ibid.

[289] "Child Dies in Fire in SE Housing Units, 17 Others Escape," *The Washington Post, Times Herald*, December 13th 1964.

[290] Ibid.

[291] Helen Dewar, "Fatal Fire Leaves Air of Fear," *The Washington Post*, May 1st, 1965. Curiously, the article gets one basic fact wrong when it claims that building codes were not as strict in 1941, when some of the units were built as in 1965. In fact, as stated above, the NCHA simply had not adhered to District of Columbia Building codes.

recently, and was placed under sedation since she imagined she could still hear her children crying for her.[292] Furthermore, Deputy Fire Marshall Eugene B. Davis, first interviewed in the aftermath of the fire that killed Mary Baxter, collapsed and died from a heart attack at the age of 53 while interviewing witnesses at the scene.[293] Davis would be the final, albeit indirect, victim of the many fires at Highland Dwellings. In the wake of this fire, tenants called on Walter Washington, then the third Chief Executive of the NCHA, to build concrete walls in between the units, which had been mandated by the city building code since before Highland Dwellings had been built.[294] Washington offered a lukewarm and noncommittal response, stating that the NCHA would "consider any proposal our engineers think is feasible."[295]

The poor materials used in the Highland Dwellings site, time constraints during production, and the NCHA's lack of follow-through on promises to update the structures contributed to the devastating nature of the fires at the project. By refusing to update its buildings according to the District of Columbia code, the NCHA was partially responsible for the scale and severity of the fires at Highland Dwellings. Even after almost a dozen people had died—most of them young children at that—the NCHA refused to rehabilitate the apartments with fireproof materials. Furthermore, the National Capital Housing Authority ignored the District of Columbia Building Code, which called for the construction of masonry walls between each individual unit, to prevent the spread of flames between domiciles. Tenants of Highland Dwellings called for the NCHA to build masonry walls in a meeting with Walter Washington. He ignored their pleas. In no way could Highland Dwellings have been called decent, or safe. The materials used at the Highland Dwellings complex created an unsafe environment by allowing flames to spread throughout the buildings. Although devastating, fires in the past had often driven engineers and city planners to remake tightly packed neighborhoods along new grids and

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[292] Ibid.
[293] Ibid.
[294] Douglas Martin, "Walter Washington, 88, Former Mayor of Washington, Dies," *The New York Times*, October 28th, 2003. Washington's first job after obtaining his law degree was with the National Capital Housing Authority, where he would have worked under John Ihlder for about four years. Washington would helm the NCHA for five years between 1961 and 1966, before President Lyndon Johnson appointed him to serve as the President of the Board of Commissioners. Washington would later work as the Chairman of the New York City Housing Authority before returning to the District of Columbia when Johnson appointed him to the position of Mayor-Commissioner.
[295] William J. Raspberry, "Fatal Fires Stir Project Dilemmas," *The Washington Post*, May 3rd, 1965.

with stronger, fireproof materials. The NCHA lost several of its buildings, but continued to rely on outdated and dangerous materials, which endangered residents throughout the complex.

Conclusion: The Human Cost of Envirotechnical Obstacles

Highland Dwellings is a distinctive case in the history of public housing in the District of Columbia. It had many of the same initial impediments to construction that Barry Farm and Lincoln Heights also experienced. The original ravines and gullies have been filled, rerouted, or buried beneath the streets or in the sewerage tunnels that run underneath the property. More than the problems of topography and hydrology, however, Highland Dwellings suffered from poor structural engineering that was employed the interest of expediency rather than safety. Whereas erosion, flooding, other problems associated with the transformation of the landscape of public housing were well-documented features of the other two wartime public housing complexes, Highland Dwellings suffered far more from the material deprivations of the Second World War. The use of substandard materials within Highland Dwellings contributed to the spread of fires, which endangered the lives and welfare of its low-income renters.

Fire has long been an agent of historical change. It is a phenomenon that can be caused by human action, but it leaves an indelible imprint on the landscape. Often, it is unanticipated and can dramatically reshape neighborhoods, communities, and even cities. During the mid-nineteenth century, fires ravaged communities across the United States. They prompted action on the part of engineers, urban planners, and municipal politicians, who funded new firefighting crews, redesigned blocks and neighborhoods, and researched new materials and ways of building that mitigated the costliness and devastation of urban fires.

The Highland Dwellings fires, on the other hand, occurred in the post-fireproof metropolis. By the 1940s the District of Columbia had already adopted many of the policies and procedures that other cities had in place to prevent the possibility of future fires. The NCHA, however, acting under pressure from the USHA ignored the proper procedure and construction practices that might have helped prevent the scale of many of the fires that it experienced in the 1950s and 1960s. The case of Highland Dwellings

reveals that in the absence of a strong institutional response to rectify poor construction practices, fires play more significant roles in undermining the health and safety of public housing residents. As was the case for the material deficits at Lincoln Heights and Barry Farms, when the NCHA was unable or unwilling to correct the operation of the envirotechnical system that it built, the system amplified the threats to decent, safe, and sanitary housing. The tenants of public housing were always the individuals who most suffered as a result of the envirotechnical obstacles of the NCHA's public housing program.

Highland Dwellings solely housed white defense workers until 1953, when the NCHA integrated all of its projects. Thus white residents sometimes experienced envirotechnical obstacles. Yet Highland Dwellings did not exhibit the same problems of siting as Lincoln Heights and Barry Farms. The records do not reveal as much about erosion, shifting soils, or flooding, as was the case for some of the other public housing complexes built during the time. However, the white residents of Highland Dwellings certainly endured envirotechnical obstacles that pertained to the types of materials that were used in the structure. Whereas the African American complexes deteriorated as a result of the interactions between a transformed landscape and poor quality materials, Highland Dwellings experienced a much more rapid decline as fire after fire struck the complex.

By 1962—nine years after Highland Dwellings had been integrated—the site was home to 423 black families and 145 white families.[296] In the early 1960s, three-quarters of families renting apartments in the complex were black. The fires continued for another three years as white families continued to leave the project. White families could access the private home rental and ownership markets, but African Americans were largely locked out of home ownership and could only rent poorer quality dwellings. Thus as the NCHA continued to dither on the subject of proper fireproofing, more and more black families were trapped in buildings that did not conform to the District of Columbia building code. The envirotechnical obstacle of improper materials gave rise to an

[296] Statement of Walter E. Washington, Executive Director, National Capital Housing Authority, Before The United States Commission on Civil Rights, April 13th, 1962; Folder "Question as to Need for Regulations to Provide for the Nondiscriminatory Use of Housing Facilities P. 1-140; Entry P 101: Transcripts of Hearings on Nondiscriminatory Housing and Homes Improvement Regulations; RG 351, NARA.

environmental injustice, as more and more black families sought shelter at a complex that had been historically prone to large fires.

Chapter Six

Transformations in the Metropolitan Landscape: Kenilworth Courts and the Envirotechnical Failures of Public Housing in the Postwar Period

Construction began at Kenilworth Courts in 1957. Between the completion of the wartime projects and the beginning of work on the Kenilworth complex, a few things that had previously conditioned the NCHA's building program had changed. For one thing, the NCHA no longer had a strong federal partner that was willing to intervene on its behalf. During the war, the USHA shielded the NCHA from the oversight of the District of Columbia, which allowed the local Authority to proceed rapidly on its projects. By avoiding the inspection and certification process, however, the NCHA also lost a valuable outside partner that could ensure the structural stability of its buildings and the grounds. According to John Ihlder, those were just two of the District's responsibilities; it was also charged with inspecting the wiring, plumbing, and other infrastructures that the NCHA provided in pursuit of decent, safe, and sanitary housing.[297]

After the end of the war, the NCHA also lost access to the large federal loans that the USHA had furnished. The purpose of the Lanham Act was to speed up housing construction for defense industry workers in strategic cities across the United States. It distributed millions of dollars in loans for local housing authorities to do just that. After the war, that money was no longer available for the NCHA. The NCHA was not alone in this instance; the Lanham Act had allowed several cities to greatly expand their public housing stock. With the USHA taking a less direct role in local affairs after the end of the Second World War, the NCHA had to rely on meager Congressional appropriations and the income it gained from rental units. By the time that work began on Kenilworth Courts, the NCHA was operating on a fairly fixed budget of $38,000 for the general maintenance of its properties.[298] New builds, on the other hand, would be funded through the rents that it collected from tenants and bond issuances.

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[297] National Capital Housing Authority, Report of the National Capital Housing Authority for the Ten-Year Period 1934-1944 (Washington, D.C.: GPO, 1944), 35-36.

[298] $38,000 would be equivalent to about $346,000 in 2020. See Bureau of the Budget and the Office of Management and Budget, "Fiscal Year Ending June 30th, 1959," *Budget of the United States Government* (January 13th, 1958), https://fraser.stlouisfed.org/title/54#19012 (accessed May 15th, 2020).

These two features of the postwar construction program were not limited to Washington, D.C. The urgency of housing construction during the New Deal and Second World War periods had fostered the rise of local housing authorities with a fair degree of independence from the municipal government. The early leadership of public housing authorities often came from the ranks of experts and longtime activists within urban housing reform movements. John Ihlder came from that background, as did Elizabeth Wood, who helmed the Chicago Housing Authority.[299] Catherine Bauer similarly took ideas about modern housing from Europe and applied them to the situation in American cities. She was empowered to do so, in part, during her time as the Director of Information and Research for the USHA.[300] In the postwar period, however, much of the technocratic leadership that rose to a prominent position in local housing authorities was pushed out or constrained by local politicians and real estate interests. Wood, for example, was forced out of the CHA in 1953.[301] The sweeping reforms and developments that were anticipated by housing reformers in the 1930s and 1940s fell by the wayside as the combination of reduced federal support and the loss of the first generation of leadership worked to give conservative opponents the upper hand in housing policy.

In Washington, D.C., however, the NCHA suffered more from a decreased budget than from a loss of leadership. Without a centralized and empowered municipal government, much of the postwar planning process for the District of Columbia was organized by different agencies, primarily the NCHA, the Redevelopment Land Agency (which was responsible for coordinating urban renewal projects), the NCPPC, and the NPS. The Board of Commissioners did not interfere with the internal workings of the NCHA to a great extent. Furthermore, the second and third executive directors of the NCHA—James Ring and Walter Washington—had either joined with the NCHA at its inception or fairly early on.[302] The continuity of leadership within the NCHA and the

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[299] Bruce Lambert, "Elizabeth Wood, 93, Innovator in Early Days of Public Housing," *The New York Times*, January 17th, 1993.
[300] Eva Newbrun and H. Peter Oberlander, *Houser: The Life and Work of Catherine Bauer* (Vancouver, BC: The University of British Columbia Press, 2000).
[301] Arnold Hirsch, *Making the Second Ghetto: Race and Housing in Chicago, 1940-1960* (Cambridge: Cambridge University Press, 1983), 234-238. The Chicago Housing Authority had already been brought under the control of the city council, however, which had happened in 1949. Hirsch, 223.
[302] Ring had been with the ADA since 1934. See "James Ring Retiring as NCHA Chief, McLaughlin Praise," *The Washington Post, Times-Herald*, July 29th, 1960. Washington joined the NCHA after

relative weakness of the District of Columbia's local government distinguished the institutional history of the NCHA from other large agencies like the CHA.

Still, with a reduced budget, the NCHA had to seek out cheaper land for construction in the 1950s. Furthermore, the NCHA's efforts to redevelop eastern Washington, D.C., along with those of other planning agencies, had resulted in population increases across the region by the late-1950s. Thus the NCHA also had fewer spaces from which to choose. The presence of the dump speaks to the growth and urbanization of the Washington metropolitan region over the course of the 1940s and 1950s. Its size was a testament to the growing population of the region, which had been facilitated in part by the NCHA's efforts to build housing and extend infrastructures into eastern Washington, D.C. The city and its surrounding counties were becoming interconnected and intertwined, as suburbanization continued apace and more of the city came into the hands of developers, the NCHA, and the RLA. The plight of residents of Kenilworth Courts was a local case of environmental injustice that was perpetuated by regional envirotechnical changes. The District of Columbia balanced wealthy and predominantly white communities' desire for clean streets, homes, and alleys against the local conditions of black residents of Kenilworth Courts. The NCHA was an agent of environmental injustice by building a large complex so close to the dump. Of course, for its part the Authority was hamstring by a diminished budget, and black land had long been devalued in metropolitan spaces.[303]

The history of the complex shows that the NCHA still struggled with the envirotechnical obstacles that emerged from its choice of sites in the postwar period. The problems at Kenilworth Courts, however, were not primarily related to re-grading and the natural hydrology and topography of the site, although those factors did matter. Rather, many of the problems at Kenilworth Courts stemmed from the site's proximity to an open-burn trash dump. Seeking cheap and readily available land, the NCHA built on top of a community that had long endured the burden of the stinking dump and its large daily fires. Thus, in keeping with the patterns that emerged during its spate of construction

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receiving his law degree in 1948. See Douglas Martin, "Walter Washington, 88, Former Mayor of Washington, Dies," *The New York Times*, October 28th, 2003.

[303] See Laura Pulido, "Rethinking Environmental Racism: White Privilege and Urban Development in Southern California," *Annals of the Association of American Geographers* 90, no. 1 (March, 2000), 16.

during the Second World War, the NCHA perpetuated patterns of environmental injustice by offering residences built in a place with significant envirotechnical obstacles.

Residents of Kenilworth Courts suffered not just from the operation of the dump, but also from its closure. After a seven-year-old child died in a fire set by sanitation workers in February of 1968, the District of Columbia finally moved to close Kenilworth landfill, which had been recognized as antiquated by local sanitation engineers since the previous year.[304] In transforming the dump into a large park, local sanitation engineers first dumped smoldering incinerator ash almost adjacent to the Kenilworth Courts complex. Residents of Kenilworth Courts bore a dual burden. First, they were harmed by the operation of the dump as an envirotechnical system meant to keep wealthier parts of the city clean and sanitary. The prevailing winds in the area carried smoke, soot, and ash towards the Kenilworth Courts complex. Second, as metropolitan sanitation engineers worked to overthrow the previous envirotechnical regime and replace it with one oriented towards recreation, the NCHA's tenants again suffered from the placement of smoldering incinerator ash. The history of Kenilworth Courts reveals that by the 1950s, the NCHA had been largely successful in helping to transform eastern Washington, D.C. into a region of communities that were deeply connected to the rest of the city. In this period, the siting of public housing still constituted an envirotechnical obstacle that contributed to environmental racism. The proximity of postwar developments to odious landscapes undermined the NCHA's pursuit of decent, safe, and sanitary dwellings in the 1950s and 1960s.

Setting the Scene: The Complex History of the Kenilworth Landscape

The NCHA carved out a corner of Northeast for the Kenilworth Courts project. Built on a wedge of land between Kenilworth Park and a large highway, the complex was isolated from more developed parts of Washington. The units comprising Kenilworth Courts were placed on 45th, Quarles, Ponds, and Douglas Streets Northeast. This small slice of the Northeastern quadrant is adjacent to the District of Columbia-Maryland border, nestled in between the Kenilworth Aquatic Gardens, a strip of undeveloped

[304] Leo Weaver, ed., *Proceedings: The Surgeon General's Conference on Solid Waste Management for Metropolitan Washington, July 19th-20th, 1967*, U.S. Department of Health, Education, and Welfare, Public Health Service, (Cincinnati, 1967), iii.

scrubland that marks the border between Maryland and the District of Columbia, and the Kenilworth Avenue Freeway to the southeast.[305]

Kenilworth Courts, outlined in blue. The Aquatic Gardens are visible as the set of segmented ponds to the West. The Anacostia River is visible in the Northwestern corner of the map. The Kenilworth Avenue Freeway runs along the Eastern border of the complex. Map constructed from the United States Geological Survey Earth Explorer Website, https://earthexplorer.usgs.gov/ (accessed November 26th, 2019); coordinates Lat.: 38 degrees 54' 41'' N, Long.: 076 degrees 56' 18'' W.

The Kenilworth area itself is fairly hilly, although it generally slopes downwards towards sea level at the Anacostia River. On the way, the landscape becomes very marshy and riven with small islands and peninsulas around which the water rises and falls with the tides. The Kenilworth property itself transitions in grade from a maximum height of forty feet above sea level in the northeast corner to about fourteen feet above sea level in its Southwest corner. The buildings are therefore located on an uneven terrain that, on average, slopes from a high point closer to the Kenilworth Avenue Freeway down

[305] The District of Columbia Housing Authority offers a helpful link to a Google-produced map of the area on the website for Kenilworth Courts, which can be found at http://www.dchousing.org/property.aspx?id=5N&AspxAutoDetectCookieSupport=1 (accessed April 5th, 2018). The website also draws attention to the fact that Kenilworth Courts is unique because of the resident management corporation that operates one set of units on the Kenilworth Courts campus.

towards the marshier lowlands of the Anacostia flats.[306] It was common for the NCHA to acquire and build on uneven terrains. If one were to walk from west to east in Kenilworth Courts, one would walk up a noticeable slope while encountering long rectangular buildings situated on terraced land. The neat, even platforms on which the apartment buildings and heating plant of Kenilworth Courts are located betray what was once a much more varied, and far steeper, terrain. The rear of the complex on the western edge of the property abuts some flat and marshy areas that are under the management of the National Park Service. Two parks—the Kenilworth Aquatic Gardens and Kenilworth Park—separate the Kenilworth Courts complex from the banks of the Anacostia. Today, the public housing units are less than one-fifth of a mile from the marshy sections of Kenilworth Park.

Just as the Kenilworth Park and Aquatic Gardens separate Kenilworth Courts from more developed sections of Washington, the Kenilworth Avenue Freeway also cuts off the complex from the rest of the Kenilworth neighborhood. Located to the east in the highlands above the complex, the Freeway was first proposed in the early 1950s and constructed in segments through the rest of the decade and into the 1960s.[307] When it was finished, the Kenilworth Avenue Freeway stood as a six-lane barrier separating the

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[306] Washington's municipal government provides a handy topographical map of the city and surrounding area, available online at http://opendata.dc.gov/datasets/adbb63799c9944ed9ae3cf82bd8f2fd5_3?geometry

[307] See Grace Bassett, "7-Mile Link Parallels Anacostia; Consultants' Plan Would Give DC First Through Interstate Artery," *The Washington Post*, April 28th, 1955, which provides an overview of the planning stages of the Kenilworth Avenue Freeway and adjoining Anacostia Freeway. At this point, freeways were largely planned and built without input from the local communities most affected by their construction. This way of planning urban renewal and transportation projects was aptly captured by Robert Moses, the infamous urban planner from New York, when he stated "when you operate in an overbuilt metropolis, you have to hack your way with a meat ax." [Robert Caro, *The Power Broker: Robert Moses and the Fall of New York* (New York: Vintage, 1975), 849.] Eastern Washington was by no means comparable to New York City in the 1950s in terms of its development or population, but the freeway construction project undoubtedly disrupted the daily lives of nearby residents. This was explicitly acknowledged in a 2007 report from the District of Columbia Department of Transportation, which stated that the Freeway is "an obstacle, where it prevents residents on either side from such destination points as the Anacostia River, a park or recreation area, a school, or a place to shop." [District of Columbia Department of Transportation, *Anacostia Waterfront: Kenilworth Avenue Corridor Study* (Washington, DC, May 2007; available at https://ddot.dc.gov/sites/default/files/dc/sites/ddot/publication/attachments/ddot_kenilworth_avenue_corridor_study_2007_part1.pdf (accessed April 18th, 2019).] This type of large scale planning declined in the 1960s and 1970s, as neighborhoods rejected plans for more freeways through densely populated urban neighborhood in what historians have called the Freeway Revolts. See, for example, Raymond A. Mohl, "Stop the Road: Freeway Revolts in American Cities," *Journal of Urban History* 30, no. 5 (July 1st, 2004): 674-706.x

Kenilworth Courts housing complex from the residential and commercial spaces on the other side. Kenilworth Courts, by nature of the dump, the Freeway, and the street layout in that particular segment of Northeast was physically segregated from the rest of Washington, D.C.[308]

The Freeway was as much a physical border as a symbolic one. As a major thoroughfare across eastern Washington, the Freeway served commuters travelling in and out of the city from Prince George's County. It was also the primary way for drivers to access the Kenilworth neighborhood, if they wanted to visit the aquatic gardens or the nearby park. Its position and size, however, were distinct in a neighborhood of small homes and narrow streets. For most residents of Washington, driving on the Kenilworth Freeway likely represented a departure, in some ways, from daily life on the other side of the Anacostia River. Visitors to what would become Kenilworth Park had to use the Freeway to access the site, and it was the main thoroughfare connecting the Kenilworth neighborhood to sections of the city to the west of the Anacostia River. The housing complex that drivers passed on their trips to the park or the suburbs was scenery that was incongruent with the bucolic parks they visited on weekends and holidays.

That housing complex had a complex history that its surroundings obscure. Kenilworth Courts was a prime example of the forces of environmental injustice at work in the NCHA's site plans. Although it was technically an integrated neighborhood, African American residents had long been relegated to the low-lying, marshy parts of this section of the city near the Anacostia River. This settlement pattern continued into the mid-twentieth century, as white and black Americans flocked to the District of Columbia for employment. The wartime population explosion, however, threatened the air, water, and land quality of the neighborhood and other sections of Northeast Washington as the Kenilworth landfill expanded and as more residents moved to the neighborhood. In spite of the slew of letters and editorials sent and published about the nuisance and burden of

[308] The intentionality of the segregation of public housing and other spaces in Southeast Washington was quite apparent to subjects interviewed about public housing and life in Southeast. "It's intentional," claimed one subject interviewed about isolation in Anacostia. The reporter goes on to state that "It's common to hear in Kenilworth Courts, as well as in other Projects, that isolation is increased by inadequate bus routes, an almost total absence of taxis, and an approach road system that puts the developments in the center of a virtual maze of streets." See Lewis M. Simons, "Cities Within Washington: Public Housing Dwellers Feel Isolation and it Increases as Whites Return to DC," *The Washington Post*, May 5th, 1978.

the Kenilworth dump, when Kenilworth Courts opened in 1959, housing planners had high hopes for the complex. Yet, those hopes quickly crumbled as the dump continued to spew toxins and noisome materials towards the public housing residents just up the block. In the case of Kenilworth Courts, the operation of the dump—an envirotechnical system meant to keep parts of the city clean and sanitary—impinged on the purpose of Kenilworth Courts, which was to rearrange the landscape and build housing in support of a decent, safe, and sanitary community.

Building a Community in the Marshes: The Emergence of an African American Neighborhood in the Anacostia Flats, 1882-1942

Because of its proximity to the Anacostia River, much of the Kenilworth neighborhood lies close to swamps and marshes. Low-lying, marshy sections of cities had long been undesirable from the point of view of developers and homebuilders, a notion that persisted through much of the twentieth century. Therefore, many of Washington's marshes were turned over to the Army Corps of Engineers for reclamation and then the NPS for management. The Army Corps' had transformed the Kenilworth area dramatically by the time that the NCHA's property opened. It had "placed flood control structures, used dredged material to turn the Anacostia Flats into useable parkland, and created an aquatic park out of the Kenilworth Gardens to protect the upper river."[309] According to anthropologist Brett Williams, the Army Corps "finished reclaiming the Anacostia Flats [the marshy areas along the banks of the Anacostia River] by 1926, depositing a lake and two islands in the river and organizing its shores into a national park."[310]

Despite the Army Corps work on the Anacostia River near Kenilworth, marshy conditions persisted in parts of the neighborhood until the 1940s and 1950s. Kenilworth Courts sits at an average elevation of approximately twenty-two feet. The grade to the west of the public housing complex, that is, towards the Anacostia, slopes fairly sharply

[309] The US Army Corps of Engineers in the District of Columbia, Office of History, http://www.publications.usace.army.mil/Portals/76/Publications/EngineerPamphlets/EP_870-1-73.pdf (accessed April 24th, 2018).
[310] Brett Williams, "A River Runs Through Us" *American Anthropologist* 103, no. 2 (Jun., 2001), 417.

downhill to an average elevation of about two feet.[311] Thus much of the land surrounding what would become Kenilworth Courts remained marshy throughout the twentieth century, even with the Army Corps' work to remediate and reclaim land along the banks of the Anacostia. Because the Kenilworth neighborhood was prone to flooding due to its proximity to the river, the land that now comprises the Kenilworth Courts complex and the surrounding area was sparsely occupied until after the Second World War.

Despite the environmental obstacles, at least one prominent family made a living in Kenilworth in the late nineteenth and early twentieth centuries. In 1882, Walter B. Shaw, a Civil War veteran and horticulturalist, purchased a 30 acre plot of land along the Anacostia Flats from his mother-in-law. The land stretched towards the east, nearly to where the National Capital Housing Authority would later acquire land for Kenilworth Courts.[312] Shaw had lost his right arm at the 1864 battle of Spotsylvania during the Civil War, but trained himself to write with his left hand and secured a job as a clerk with the Treasury Department after the war.[313]

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311 Open Data DC, Government of the District of Columbia, "Topography—2 Foot Contours," http://opendata.dc.gov/datasets/topography-2-foot-contours?geometry=-76.975%2C38.907%2C-76.914%2C38.918 (accessed April 5th, 2018).
312 Hetty Lipscomb, "Knee-Deep in Park's Water Lillies," *The Washington Post*, July 15th, 2005; A Washington Man Who Farms the Water," *The Washington Post*, August 2nd, 1908.
313 Lipscomb, "Knee-Deep in Park's Water Lillies."

Walter B. Shaw in the 1880s/1890s. [National Park Service, "Kenilworth Park and Aquatic Gardens: People," https://www.nps.gov/keaq/learn/historyculture/people.htm (accessed April 30th, 2019).

Despite the material security that his professional career offered, Shaw was perpetually drawn to his farm. He eventually grew a small business selling water lilies to florists along the east coast. His hobby largely stemmed from his childhood surroundings. Shaw was born near the water in Penobscot Bay, Maine, and as a profile of him for a 1908 *Washington Post* article put it, "he naturally turned his eyes waterward, for water was practically the only thing his eyes rested upon until he was nine years old."[314] Soon after he acquired the 30-acre plot in Kenilworth, Shaw began experimenting with various lily cultures. His hobby eventually blossomed into an occupation, and he soon devoted himself to raising lilies full time, importing exotic varieties from around the world.[315] Upon Shaw's death, in 1921, the family business passed to his daughter, Helen Shaw

[314] "A Washington Man Who Farms the Water," *The Washington Post,* August 2nd, 1908.
[315] Ibid.

Fowler.[316] By the 1930s Fowler, following in her father's footsteps, had acquired a reputation as an "authority on water lilies.[317]

The father and daughter built an envirotechnical system along the banks of the Anacostia River. Their efforts to segment the banks of the river into individual ponds, and their work to raise exotic varietals of lilies include both human and natural processes. The two were intertwined on the Shaws' land. However, the Army Corps of Engineers had different plans for the Shaws' property. For the Corps, the lily ponds were an impediment to its own effort to build an envirotechnical system in the Anacostia River. Tasked with straightening and dredging the Anacostia, as well as fill in the marshes and swamps along its banks, the Army Corps wanted to build an envirotechnical system that would be commercially viable, profitable for real estate developers, and less hospitable for disease-carrying mosquitoes. The Corps also hoped to limit damage to property as a result of periodic flooding along the Anacostia's banks. The Shaws wanted to protect their ponds as a means to maintain their business and provide recreational opportunities for local visitors. The struggle between the Army Corps and the Shaw family was a conflict about which envirotechnical system would prevail in that part of the Anacostia basin.

Arguing that sections of the original Shaw farm had always belonged to the city, rather than to Shaw's mother-in-law, in the 1930s the Army Corps moved to condemn some of the lily ponds and take over the land without compensation. At the time, the lily ponds were seen as malarial traps and dangerous to the health and welfare of Washington's residents. Wetlands and marshes were not considered intrinsically valuable as natural habitats or means to stem downriver flooding on the Anacostia until later in the twentieth century.[318] The Corps therefore hoped to fill in the ponds in the interest of

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[316] National Park Service, "Kenilworth Park & Aquatic Gardens: People," https://www.nps.gov/keaq/learn/historyculture/people.htm (accessed April 5th, 2018).
[317] Ibid.; "Bethesda Garden Club Plans Show," *The Washington Post*, May 19th, 1935.
[318] Wetlands and mashes can act as catchments for floodwaters by diverting flows that otherwise might threaten downriver communities. Furthermore, the prevailing thought about the value of marshes and wetlands changed as popular attitudes about nature and the intrinsic value of wetland habitats changed over the course of the twentieth century. In *Dsicovering the Unknown Landscape: A History of America's Wetlands*, historian Ann Vileisis traces the emergence of ideas about the importance of protecting wetlands and marshes in the first decades of the twentieth century. By the late-1950s and throughout the 1960s, citizens and lawmakers began working to protect wetlands from drainage and pollution which threatened those ecosystems. See Ann Vileisis, *Discovering the*

public health.[319] Fowler fought tooth and nail against the encroachments of the Army Corps of Engineers. Because of the successful business that her father had built, she was able to hire teams of lawyers to successfully force the Army Corps to back down from seizing her lands or otherwise disrupting the business. In the end, Fowler maintained control of the envirotechnical system, and continued to produce water lilies on her family's pond.

Despite her struggle to retain ownership of the ponds, in her early sixties Fowler decided to sell the family land. Looking to the future preservation of the lily ponds, Fowler decided to sell seventeen acres of marshland and ponds to the federal government for a sum of 15,000 dollars.[320] Within two years, the National Park Service had converted the formerly private lily ponds into a new park on the banks of the Anacostia. Helen Fowler herself continued to be involved in the affairs of the Aquatic Gardens, leading tours and nature hikes on lands that used to belong to her family.[321]

The Kenilworth Aquatic Gardens offered a sort of beauty and aesthetic pleasure that were starkly contrasted by the severely degraded quality of the adjacent Anacostia River itself. For decades the River had faced environmental deterioration from a number of sources. Gravity-fed sewer lines emptied waste from residential, governmental, and business districts into the river. Furthermore, as Washington and the surrounding rapidly developed industrial and commercial facilities in the decades following the Civil War,

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Unknown Landscape: A History of America's Wetlands (Washington, DC: Island Press, 1997), Chapters Eight and Eleven. In 1993, the Army Corps of Engineers reversed its actions from the 1930s and decided to restore the wetland marshes in Kenilworth, "at elevations designed to support high and low marsh communities. After sediments reached a consolidated state, guts were cut through these areas to insure tidal flows in the marsh." See Daniel R. Murphy, Robert E. Foley, et al., *Effects of Wetland Restoration Using Anacostia River Sediments at Kenilworth Marsh*, Publication no. CBFO-C98-02, (Annapolis: US Fish and Wildlife Service, Chesapeake Field Office, June 30th, 1998), 1. It is worth considering the long history of New Orleans as well. Wetlands were incredibly important for controlling flooding in the bayou environment. Yet, in pursuit of buildable land, local, state, and federal engineers (within the Army Corps of Engineers) drained the city's lowlands. This made engineers reliant on technological fixes to keep New Orleans dry, which could and did fail in disastrous ways throughout the twentieth century. See Ari Kelman, *A River and its City: The Nature of Landscape in New Orleans* (Berkeley, Los Angeles, and London: University of California Press, 2003).

[319] Joe Lapp, *Kenilworth: A DC Neighborhood by the Anacostia River* (Washington, DC: Humanities Council of Washington, DC, 2006), 6-7. Available in the Washingtoniana Collection's Vertical Files, under Kenilworth—Neighborhood Studies.

[320] "U.S. Buys Shaw Lily Ponds as Rival to Cherry Blossoms," *The Washington Post*, September 15th, 1938. $15,000 is equivalent to about $270,000 in 2020.

[321] See, for example, "Shaw Lily Gardens in Bloom Under Federal Auspices," *The Washington Post*, June 13th,1939; Katherine Barrett Pozer, "Irresistible Blue, Pink, White, and Yellow Lilies, Lotus, Cover 9 Acres at Shaw Aquatic Gardens in Kensington," *The Washington Post*, August 7th, 1938.

industrial effluents joined organic waste in the Anacostia. Horses too served as significant urban polluters, as their waste—and sometimes their bodies—were thrown into rivers and washed further downstream.[322] In the late-nineteenth century, the Anacostia River experienced increasing loads of both industrial pollutants and sewage. These problems persisted after the Second World War, and Kenilworth Courts residents would soon find the river unsuitable, more or less, for recreation. The construction of networks of roads and highways in the Anacostia watershed ensured that oil, lead, and other noxious pollutants would be swept off of impermeable surfaces in the event of a rainstorm and into the many tributaries carrying water into the Anacostia. Helen Fowler conducted tours of her lily ponds mere feet away from a river that was slowly losing its ability to sustain the range of life that it had in the past.

Four years after acquiring part of Fowler's land, in 1942, the National Park Service granted some of the property it owned along the Anacostia River to the District of Columbia, to be used as a municipal dump. Once opened, there was no barrier between the dump and the surrounding neighborhood. Records show that access to the Dump was fairly easy for local residents and children from Kenilworth Courts would often visit the landfill to scavenge for usable items.[323] This also meant that trash and any run-off from the landfill could easily infiltrate the Anacostia River, since the only barrier between the landfill and local bodies of water was the artificial berm created by the trash piles left by the city.[324]

The decision to build the dump along the banks of the Anacostia made sense for planners at the time. Business owners and municipal planners had long seen the river as a suitable sink for industrial and organic effluents. The Potomac Electric Power Company's (PEPCO) Benning Road Power Plant was another local nuisance. Opened in 1906, the Benning Road Power Plant "provided Pepco's first system-wide electricity supply to the

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[322] John R. Wennersten, *Anacostia: The Death and Life of an American River* (Baltimore: The Chesapeake Book Company, 2008), 72-87.
[323] Bob Levey, "For Growing Youths, Treasures in the Trash," *Washington Post*, September 2nd, 2004.
[324] US Department of Health and Human Services, Public Health Service, "Health Consultation: Kenilworth Park Landfill—Southside NE Washington, DC," (Atlanta: Agency for Toxic Substances and Disease Registry) January 23rd, 2006, 2, https://www.nps.gov/nace/learn/management/upload/2006-ATSDR-Health-Consultation.pdf (accessed May 28th, 2020).

District of Columbia and nearby Maryland suburbs."[325] The plant was powered by coal, and posed a long-term threat to the health and welfare of the local residents. Furthermore, the plant was located at the southernmost point of what would eventually become the Kenilworth dump.[326] Until the 1940s, racial covenants dictated that African American residents of the Kenilworth neighborhood would have to live closer to the marshy sections of the Anacostia, and therefore the heavy industry and sanitation infrastructures located there.[327] Even after the era of restrictive covenants, white privilege worked to restrict people of color to the least desirable environmental surroundings east of the Anacostia.[328] Black land, in turn was devalued in comparison to white land. Large developers like the NCHA would therefore have an easier time acquiring black neighborhoods for housing construction. Most white communities were located in the highlands further east, as discussed in subsequent chapters. The banks of the Anacostia and the river itself became sacrifice zones, or a series of discrete areas selected to take on the bulk of environmental nuisances and dangers so that the rest of the City of Washington could enjoy the fruits of development. African Americans had to make their homes on the peripheries of those areas.

Building the Dump: Balancing a City's Sanitation against the Cleanliness of a Black Neighborhood, 1942-1957

The Kenilworth dump operated as an open-burn landfill immediately after it opened in 1942. This meant that the city hired trash haulers to dump waste in the landfill and burn it each afternoon. Kenilworth had not yet experienced the population growth that other neighborhoods on the opposite side of the river had seen. It was relatively

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[325] PEPCO, Inc., "Decommissioning the Benning Road Power Plant Factsheet," *Benning Service Center* http://www.benningservicecenter.com/benning-power-plant-closure/factsheet.aspx (accessed April 21st, 2019).

[326] See figure three. The Benning Road Power Plant was not close enough for residents of Kenilworth Courts to see from their neighborhood. Its siting, however, indicates the extent to which Washington's planners and sanitation engineers considered the Anacostia to be an ideal location for the more noxious elements of the urban metabolism.

[327] For more on the rise and decline of legal racial covenants, see Michael Jones-Correa, "The Origins and Diffusion of Racial Covenants," *Political Science Quarterly* 115, no. 4 (Winter, 2000-2001): 541-568.

[328] For a comprehensive theorization of white privilege and environmental racism, see Laura Pulido, "Rethinking Environmental Racism: White Privilege and Urban Development in Southern California," *Annals of the Association of American Geographers* 90, no. 1 (March 2000): 12-40.

lightly populated until the NCHA decided to build a new public housing complex there. Still, there was a community in Kenilworth. The District of Columbia decided to extend sanitary infrastructures deep into that community, turning it into the city's primary dumping ground. This reputation, and function of the neighborhood, would continue into the 1960s and 1970s.

That Washington's sanitation engineers opted to use the former Army Corps dredging site as an open burn dump makes sense, considering the long history of the river being used for such related activities. The dump opened in 1942, well after improvements in sanitation technologies enabled cleaner methods of disposal for communities close to landfills and dumps. In his seminal work on the history of sanitation in cities across the United States, Martin Melosi traces how the shift from miasmatic to bacteriological theories of disease transition encouraged urban reformers to consider filth as a nuisance that could be dealt with through technological fixes.[329] This shift enabled engineers to take responsibility for sanitation, rather than public health experts.[330] Engineers were prone to take a piecemeal approach to urban sanitation, simplifying a complex range of causes and potential solutions to mounting urban waste into simpler questions about how to safely dispose and contain the garbage, pollution, and organic wastes produced in US cities. In the bacteriological era, waste management became a simplified problem to be alleviated in strictly technological ways, rather than a metropolitan problem to be dealt with holistically.

This is not to argue that engineers ineffectively dealt with mounting urban wastes or failed to provide some solutions to dirty and cluttered urban areas. Rather, the shift in sanitary management from public health officials to engineers failed to address a culture of consumption and waste in the United States. Therefore, it was incumbent upon engineers to build landfills that were capable of containing ever-increasing amounts of waste safely, without threatening urban land, air, or water. According to Martin Melosi, the first sanitary landfill, that is a landfill that contains waste below a cover and keeps it fairly isolated from the surrounding environment, was built in Fresno, California, in the

[329] Martin Melosi, *Garbage in the Cities: Refuse, Reform, and the Environment: 1880-1980* (College Station, TX: Texas A&M University Press, 1981), 81.
[330] Ibid., 84.

1930s.[331] Workers dumped garbage in trenches and covered it with a few feet of dirt. This solution had advantages over simply leaving waste in the open. Vermin could not reach the garbage under the soil and odors from the wastes were reduced, alleviating the nuisances faced by local communities.[332] Engineers worked to continue refining sanitary dumping practices, thereby reducing the incentive for communities to work to reduce overconsumption and its attendant wastes.

The Fresno model was adopted by other cities across the US over the course of the next two decades. Even very small cities that lacked the revenue and renown of the nation's capital, such as Lake Worth, Florida, were able to marshal the appropriate resources and expertise to begin using sanitary landfills by the mid-1940s.[333] Los Angeles had adopted the dump, compact, and cover method for some of its landfills in the 1950s.[334] The fact that Washington continued to use the Kenilworth Dump into the 1950s and 1960s is therefore significant. In the capital of the United States metropolitan engineers balked at applying proven methods of cleaner and less odious waste disposal. Kenilworth Dump continued to accept incinerator ash and household and commercial refuse, which workers burned daily in large pits until 1968.

The District of Columbia brought about a significant envirotechnical change in the Kenilworth neighborhood. Its sanitation engineers looked across the city and decided that the community would be a suitable location for Washington's primary dumpsite. Kenilworth became invisibly connected to neighborhoods across the District of Columbia. The trucks that picked up trash in Georgetown, Capital Hill, and elsewhere almost always finished their days at Kenilworth, where their hauls were burned adjacent to a growing residential community. Whereas residents in other neighborhoods did not see their connection to Kenilworth, the envirotechnical system was all too obvious for those living in Kenilworth, who contended with the mounting waste from more prosperous parts of the city.

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331 Martin Melosi, *Garbage in the Cities: Refuse, Reform, and the Environment*, revised edition (Pittsburgh: University of Pittsburgh Press, 2005), 182.
332 Andrew Fairbanks, et al., "Talking Trash: A Short History of Solid Waste Management in Florida," *The Florida Historical Quarterly* 91, no. 4 (Spring 2013), 534.
333 Ibid., 534-535. Lake Worth opened its first sanitary landfill in 1946.
334 Adam Diamond, "What a Waste: Municipal Refuse Reform and a Century of Solid-Waste Management in Los Angeles," *Southern California Quarterly* 88, no. 3 (Fall 2006), 340.

Furthermore, sanitation engineers had built this new envirotechnical system. They were the individuals responsible for choosing the site, routing the trucks, and figuring out where to burn the waste. In the 1960s, the relative power of those sanitation engineers was greater than that of the NCHA. While the latter was able to build homes, the ultimate authority over the envirotechnical landscape of Kenilworth rested with the sanitation engineers. As in the previous case studies, in the case of Kenilworth Courts, the NCHA set in motion a new envirotechnical system, but did little to respond to the environmental obstacles that emerged from it. The Authority did little to fight the continued operation of the dump, or the placement of incinerator ash near its homes. These two consequences of the sanitary infrastructure near Kenilworth Courts would impinge significantly on the health and welfare of the NCHA's tenants. They suffered the brunt of the environmental burdens produced by the District of Columbia's sanitation system, and found little support from the institution that had chosen that location on which to build their homes. Once again, the NCHA's inability to respond to envirotechnical obstacles at a public housing site—this time, because of the power imbalance between the sanitary engineers and the NCHA's leadership—resulted in greater environmental burdens for its black residents.

By the 1940s and 1950s, despite the presence of the dump, the Kenilworth neighborhood was moderately populated. Although the neighborhood was integrated, African American residents suffered the brunt of environmental nuisances. White residents generally lived in the uphill and drier sections of the neighborhood, while settlement patterns forced African Americans towards the marshy, low-lying sections of the neighborhood, closer to Helen Fowler's lily ponds, the Anacostia, and of course the Kenilworth Dump. In fact, the site that would eventually be home to Kenilworth Courts was predominantly African American even before the complex was built.[335] Despite the hardships that black residents of Kenilworth endured as a result of their less-than-desirable surroundings, they built a thriving community and were engaged in the affairs of the neighborhood at large near the banks of the Anacostia River.

Kenilworth residents did not stand idly by as the Dump was zoned for their neighborhood. In the opening decades of the twentieth century, the Kenilworth Citizens'

[335] Lapp, 11.

Association actively petitioned the city government to site the city airport on the empty land where the dump was planned. Kenilworth residents thought of air travel as a novelty during this period, and hoped that the siting of the airport would bring commerce to their neighborhood. Instead, residents received the city's open burn dump. The National Park Service issued a permit for the dump in 1942.[336]

The dump immediately proved to be a nuisance for residents of Kenilworth. Trucks streamed into the site daily, adding to the amount of garbage burned every afternoon. According to Joe Lapp, who compiled a brief history of the neighborhood for the Washington Humanities Council,

> Living close to the dump was not a pleasant experience. The dark smoke rising from piles of smoldering trash became an infamous landmark visible from around the city. When the wind shifted just right, the smoke and smell invaded nearby neighborhoods and houses. Residents tell of fresh laundry on the line suddenly black with soot and of houses turning from a freshly-painted white to a dirty gray. Caolivia Herron remembers large pieces of newspaper ash falling from the sky at her grandparents' house on Douglas Street, about three-quarters of a mile from the dump.[337]

From the outset residents of Kenilworth complained about the siting of the dump and the smoke and odors it produced. Only four months after the Dump began operations, in late fall, local resident Mason T. White published the following letter to Washington's Board of Commissioners:

> The District Commissioners are very sensible gentlemen, but I still contend that a hint to the wise is sufficient. They have placed the new dump on the lowlands just a little west of Kenilworth—a very excellent idea, since it will rid this marshy land of mosquitos and render it suitable for parks and building. Let us hope it becomes a lovely spot to add to the already beautiful Nation's Capital. The Capital City is spending thousands of dollars for the protection of its inhabitants against the possibility of air raids. It is a known fact that when we have blackouts the people by law are compelled to turn out their lights or black

[336] Ibid., 17.
[337] Ibid., 18.

> out their windows, and all lawbreakers are liable to fines. I do not think it reasonable nor justifiable to impose fines for little errors when the District Commissioners let that dump burn through the night like a volcano. I believe sensible citizens will agree with me when I say that there should be a law to compel the extinguishing of all bonfires at dusk. And last but not least, the dump is an irritating nuisance when the wind is blowing from the northwest.[338]

White's comments provide a description of the early operation of the dump. It was a noticeable nuisance in the neighborhood soon after sanitation workers started using it. His wry tone draws attention to the visibility of the fires at the dump, tying operations there to larger concerns about the security of his neighborhood during the Second World War. Washington's sanitary services created at best a nuisance and at worst a public health problem for nearby residents.

Public Housing, a Landfill, and a Park: Building and Managing Kenilworth Courts, 1957-1980

In 1957, fifteen years after the NPS transferred the dumpsite to the District of Columbia, the National Capital Housing Authority signed a contract to begin building Kenilworth Courts. The site selected had long been part of the African American neighborhoods of Kenilworth. As mentioned above, those areas were swampy and low-lying, as opposed to the uphill neighborhoods claimed by white residents. African Americans also contended with the bulk of the environmental burdens lining the Anacostia River, not to mention the polluted river itself. Thus, while it might have seemed appropriate to the NCHA to construct a public housing complex meant primarily for African American renters in a black neighborhood, in fact the selection of that site would do more, in the long run, to maintain historical patterns of environmental injustice. Residents of Kenilworth Courts, like those in the surrounding neighborhood, would have to deal with the nuisances posed by the nearby dump. The polluted environment significantly shaped the development of the public housing program in Kenilworth.

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[338] Mason T. White, "Complains about Dump Burning 'Like Volcano'," *Washington Star*, December 2nd, 1942.

For the two decades or so prior to the opening of Kenilworth Courts, the neighborhood had experienced significant demographic shifts. Kenilworth was increasingly becoming predominantly African American. Taking advantage of low-interest rate mortgages, government subsidized housing finance, and the large-scale development of housing tracts in the suburban counties of Washington, DC, Kenilworth's white residents rapidly moved away. By December of 1953, only 28 students attended the white elementary school in Kenilworth.[339] Although Kenilworth Courts was initially integrated, it quickly changed to reflect the neighborhood dynamics in the 1950s and 1960s.

The NCHA built Kenilworth Courts with a mix of two, three, four, and five bedroom apartments contained in two-story walkup, semi-detached structures.[340] That type of physical organization was meant to accommodate families of various sizes, who were being moved from urban renewal projects that were unfolding in other parts of the city. In the end, Kenilworth Courts contained about 420 units. The complex opened and began accepting tenants in 1958 and 1959. Initially, Kenilworth Courts was considered a model for public housing across Washington, DC, and—perhaps by implication—the rest of the country. The Washington Urban League selected Kenilworth Courts as a site for a demonstration project that centered on finding suitable safe, decent, and sanitary homes for residents of Washington displaced by urban renewal.[341] In 1958, the Executive Board of the National Capital Housing Authority gave both the Ambassador from Morocco and Ahmed Bargach, then the Governor of the Casablanca District, a tour of Kenilworth Courts.[342] In 1961, along with Greenleaf Gardens, the Arthur Capper Dwellings, and the Kelly Miller Dwellings, the NCHA chose Kenilworth Courts to host an open house, where the general public could tour public housing complexes and view the conditions

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[339] Lapp, 10.
[340] "NCHA Signs Contract on Kenilworth," *The Washington Post*, November 1st, 1957.
[341] "Urban League Names New Aide," *The Washington Post*, January 24th, 1960.
[342] "National Capital Housing Authority Meeting, Wednesday, June 10th, 1959," Archives of the District of Columbia, National Capital Housing Authority, Minutes, 1954-1968, Box 1, Folder Duplicate Minutes—January 1954-May 1960. "Honorable Ahmed Bargach, Governor of Casablanca, Morocco, Schedule," NARA-DC, RG 302: Records of the National Capital Housing Authority, "Alphabetical Files, 1943-1960," Entry P13, Box 1, Folder A.

that the NCHA provided to low-income renters across Washington.[343] The NCHA initially had high hopes for the Kenilworth Courts housing complex. Within ten years, however, the Kenilworth Courts housing project clearly fell short of John Ihlder's vision for properly decent, safe, and sanitary housing in the nation's capital, as the Dump continued to burn on most days, attracting vermin and sending smoke and loose trash across nearby streets and lawns.

By the mid-1960s, however, the region's sanitation engineers began taking note of the antiquated methods of waste disposal in the nation's capital. In 1967, the Surgeon General of the United States, William H. Stewart, called a conference in Washington to discuss solid waste management for the city and the surrounding counties. At the time of the conference in November of 1967, the representative of the Army Corps of Engineers for the District of Columbia's Board of Commissioners and the Secretary of the Interior had decided to shutter the Kenilworth dump. They hoped to convert the dump into "a sanitary landfilling demonstration for community improvement."[344] Apparently, the health and wellbeing of the local community were on the mind of the Surgeon General, who wrote the forward to the proceedings. Stewart wrote that "[t]he Kenilworth Dump has long been an ugly, enormous, burning pile of solid waste, befouling the air of our nation's capital with great plumes of smoke. It has been a menace to health in Washington, D.C. and its environs."[345] Stewart's remarks are worth noting:

> Metropolitan Washington has a unique burden. Our mantle of smoke from smoldering refuse is more than a local nuisance. The dirt and refuse in our alleys is more than a local disgrace. This is the nation's showcase city. The millions who come here should find a model environment. Instead, when they look behind our monuments, they see something less… Some of these hazards relate to the familiar public health problems of communicable disease, the problems associated with filth, rats, and vermin which we now how to control but can never overlook…Others are newer, less completely understood, harder to handle.

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[343] "Washington Community Development Weeks Set: Octagon Gallery Exhibit," *The Washington Post*, April 30th, 1961.
[344] Leo Weaver, ed., *Proceedings: The Surgeon General's Conference on Solid Waste Management for Metropolitan Washington, July 19th-20th, 1967*, U.S. Department of Health, Education, and Welfare, Public Health Service, (Cincinnati, 1967), iii.
[345] Ibid.

> These stem from the increasing quantity and variety of chemicals released into the air from many sources including the imperfect burning of solid wastes. Every year we are learning more about the damage done when we breathe this kind of air, day in and day out. Everything we learn makes control of this kind of pollution increasingly urgent.[346]

Stewart here repeats the refrain that reformers like Ihlder had brought up over the preceding decades. Washington, according to Stewart, was a model city, and the fact that it contained an open-burn dump near a large river, two sizable parks, and a residential neighborhood was inexcusable. In fact, the location of the dump was less forgivable for a city like Washington, which was meant to provide an example of proper waste disposal and a livable environment to the rest of the nation.

Other speakers at the conference emphasized the particularly noisome environmental conditions that residents of Kenilworth Courts faced. Richard Prindle, then the Assistant Surgeon General and the Director of the Bureau of Disease Prevention and Environmental Control, discussed at length the public health crises afflicting those who lived near the Kenilworth Dump, including residents of Kenilworth Courts.

> Too often, however, refuse disposal operations are open dumps—festering scars on the landscape. Flies, rats, and other disease-carrying pests find large quantities of food, a favored breeding medium, in the piles of exposed refuse. The polluted drainage from open dumps is an additional insult to ground and surface water supplies in the area. The characteristic foul odors, produced by decomposition, together with the smoke created by open burning, are often identifiable for miles.[347]

By the late-1960s, Kenilworth Courts was situated nearby a polluted river and an open burn dump. Police officers tied the unsanitary conditions inside and around the Kenilworth Courts complex to a range of social ills, in some cases claiming the cockroaches that infested the Kenilworth Courts buildings were attributable to the

[346] Ibid.,, 5-6.
[347] Ibid., 15

frequent crimes committed in the vicinity of the public housing project.[348] The public health problems that the dump posed threatened the health and welfare of residents of Kenilworth Courts. By the late-1960s, the Kenilworth neighborhood was a sacrifice zone, turned into a blighted and stinking section of Northeast Washington.

By providing sanitary engineers and public health officials with an opportunity to speak, the Surgeon General's Conference on Solid Waste Management for Metropolitan Washington drew greater attention to the distinct set of public health problems that the dump posed to nearby residents. As a result of this conference, the sanitation engineers present decided that the city ought to build a new incinerator and discontinue the practice of burning solid waste at Kenilworth dump by the end of 1967. However, the city could not find a contractor to handle the disposal of trash elsewhere in the city and the deadline lapsed. Dumping and burning continued past January 1st, 1968, when operations were supposed to stop and the process of turning the landfill into a demonstration project for dump reclamation was meant to begin.[349]

It took a tragedy for the Kenilworth Dump to finally close. On February 15th, 1968, Kelvin Tyrone Mack, a seven-year-old boy from the southern end of the Kenilworth neighborhood was scavenging through the dump. This was a frequent practice for young children in the neighborhood. Garbage trucks streamed into the dump throughout the morning, depositing solid waste that would be burned in the afternoon. Children from the neighborhood and indeed Kenilworth Courts and the surrounding neighborhood would comb through the deposited material, searching for salable items or useful objects, such as bicycle equipment that could be used for repairs. While Mack and his friends were playing near a trash fire, the winds shifted unexpectedly, picking up the

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[348] "Police Curb Outbreak in Northeast," *The Washington Post*, August 24th, 1966. See, for context, Dawn Day Biehler's *Pests in the City: Flies, Bedbugs, Cockroaches, and Rats* (Seattle and London: University of Washington Press, 2013). In her monograph, Biehler traces the history of pest control over the course of the twentieth century. She finds that pests are political creatures, which are best dealt with through community action. Individual approaches to pest management, which were propped up by cheap and abundant pesticides in the mid-twentieth century, place a particular burden on poorer families, which lack the income to adequately deal with pests. This perpetuates the propagation of pests in urban communities, but also casts the poor as particularly prone to infestations. When individual households are responsible for eradicating vermin, and only wealthier homes can afford the time and resources, urbanites begin to see pests as a problem of poverty, rather than a failure of community action. The primary source referenced earlier in this footnote is a prime example of this social and environmental development in the mid-twentieth century.

[349] Lapp, 18-19.

flames about ten to twenty feet into the air. Mack and his companions ran from the site. Mack fell, and his clothes caught on fire as his companions ran further.[350] Sadly the young boy found himself trapped in the flames as sanitary engineers performed their daily work burning the solid waste by dousing it with gasoline.[351] Outraged, by the incident, "[o]fficials of the Greater Washington Citizens for Clean Air expressed condolences…to the boy's family and sent a letter to Mayor Washington urging an immediate end to open-end burning at the dump."[352] Washington promptly did so, in order to avoid further accidents at the site.

The closure of the Kenilworth Dump posed a predicament for the Washington region's sanitary engineers. Without a new, modern incinerator in the Washington area, how was the metropolis supposed to dispose of its waste? The Kenilworth Dump had been a reliable space to dump trash, but was there another option? After a brief debate, Washington's sanitary engineers decided to discontinue using the Kenilworth area as a dumping ground for the rest of the city and surrounding counties' solid waste. However, the landfill would still accept ash from local trash incinerators.

The incinerator ash served a greater purpose: the Kenilworth landfill would become a demonstration project for the creation of new parkland from old trash dumps. Incinerator ash, once properly deposited and tamped down, could be used to landscape the site. This method had proven effective in reclaiming landfills prior to Kenilworth. At the 1967 conference of sanitation engineers, Frank R. Bowerman, then the Vice President for Development at the Aerojet-General Corporation highlighted some of the "simple but effective techniques that [he] helped develop in using sanitary landfilling for the construction of parks, golf courses, and botanic gardens in Southern California."[353] No longer would the Kenilworth Landfill stand as a polluted mound on the banks of the Anacostia. Rather, the landfill would be filled, capped, covered in topsoil, and landscaped in order to produce a park worthy of its position on the banks of the Anacostia in the nation's capital.

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[350] Phil Casey, Dump Fires Doused After Death of Boy," *The Washington Post*, February 16th, 1968; "Racing Fire Kills Fleeing Boy at Dump," *The Washington Post*, February 16th, 1968.
[351] Casey, "Dump Fires Ended after Death of Boy."
[352] Ibid.
[353] Weaver, 87.

Before the landfill was transformed it was mapped and divided into five sections. Each section would contain different materials and would be filled in different increments. Area "E" was directly across from the Kenilworth Courts public housing complex. According to planning documents, Area E was to receive six hundred cubic yards of ash residue per day, six days per week, for several weeks. The residue was to be delivered while still smoldering. Once deposited, it would be quenched and compacted to six inches each day.[354] Having faced the odor, uncleanliness, and health concerns posed by the open fires at the now-defunct Kenilworth Dump, tenants of Kenilworth Courts were now asked to shoulder the burden of the region's incinerator ash in their backyards. Since the ash was not quenched when it was delivered and was still smoldering, it is likely that some of it would also be carried by the winds to their homes.

The Kenilworth Courts public housing complex's residents faced many economic, social, and political barriers in opposing the depositing of incinerator ash. For one thing, many residents were living in poverty, working long hours in order to support themselves and their families. For another, Kenilworth Court residents found themselves physically segregated and isolated not just from other parts of Washington, but even from much of the Kenilworth neighborhood as well. This physical arrangement was not conducive to the forging of strong ties to the community that could be used as political leverage against the dumping of incinerator ash. For another, the residents of Kenilworth Courts rented, but did not own, the homes in which they lived. As evidenced in the case of the Marshall Heights and Barry Farm homeowners' resistance to plans put forward by the NCPPC and NCHA, property owners could sometimes gain small victories over planning agencies.[355] Finally, there were no local government officials to appeal to, nor did the tenants have federal representation. The only recourse was to try to bargain with often

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[354] United States Consumer Protection and Environmental Health Service, *Kenilworth Model Sanitary Landfill: Interim Report on Solid Waste Demonstration Project, Dec. 1967-Jan. 1969*, Environmental Control Administration, United States Department of Health, Education, and Welfare (1969), 2-5.

[355] The literature on environmental justice has shown that property owners often have leverage over local administrators that renters do not. Love Canal protestors, for example, used tax and mortgage strikes to bring attention to their plight. In that case, renters were left out of the community's demonstrations. See Elizabeth Blum, *Love Canal Revisited: Race, Class, and Gender in Environmental Activism* (Lawrence: University of Kansas Press, 2008).

unresponsive or antagonistic metropolitan agencies. Sometimes, this was done successfully.[356] Often, it was not.

Apart from the tactical barriers they had to surmount to challenge the incinerator ash, African American residents of Kenilworth Courts suffered from longstanding ideological connections that tied black communities to unclean spaces. In his 2015 monograph *Clean and White: A History of Environmental Racism in the United States*, historian Carl Zimring traces the long history of how environmental factors have shaped historical perceptions of race and racial inequalities.[357] Zimring describes how the scientific approaches to waste management that began to emerge towards the end of the nineteenth century and the racial categorizations and precise hierarchies that also developed in that period associated non-white races with dirt and unsanitary conditions.[358] For policymakers and planners, historical connections between non-whiteness and unclean spaces may have delayed their drive to act. After all, to the sanitation engineers the Kenilworth neighborhood had served its purpose as a trash bin for the rest of the city. Their primary concern was with the appearance of smoke on the banks of the Anancostia.

Zimring's argument helps explain why the first location selected for the ash was nearly adjacent to Kenilworth Courts. Residents of the complex faced a few years of dumping and landscaping—beginning with the plot directly across from their homes—as crews under the supervision of local sanitary engineers, the National Capital Parks and Planning Commission, and the National Park Service worked to turn Kenilworth dump into a model demonstration landfill site. Dumping would not cease until the early-1970s, which meant that Kenilworth Courts tenants faced months during which trucks carrying incinerator ash and refuse from other parts of the city ran down the Kenilworth Avenue Freeway to deposit their loads on the site near their homes.[359]

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[356] The Barry Farms Band of Angels was able to win a small victory during the Washington administration of the NCHA, when they convinced the executive director to award funds for interior repairs. See Chris Myers Asch and George Derek Musgrove, *Chocolate City: A History of Race and Democracy in the Nation's Capital* (Chapel Hill: The University of North Carolina Press, 2017),
[357] Carl Zimring, *Clean and White: A History of Environmental Racism in the United States* (New York: NYU Press, 2015), 348.
[358] Ibid., 4-5.
[359] Lapp, 18-19.

When dumping finally did end, the Kenilworth Park contained about four million tons of "raw refuse, incinerator ash, and other burned residue, had an average depth of 25 feet, and covered an area of about 145 acres."[360] Operations at the Landfill left an enduring mark on the residents of Kenilworth Courts, not only in terms of their immediate surroundings, but also on their health and wellbeing. In 2007, the Department of Health and Human Services, while acknowledging that it does not assess health issues as related to exposure pathways in the past, did go as far as to write that "the 25+ yrs of burning/ash disposal [sic] has in all likelihood led to exposures of those who resided near the landfill and of employees working at Kenilworth Park Landfill."[361] When considered with the amount of time that residents of Kenilworth Courts faced refuse burnings, the particular set of health issues that tenants faced become clear.

[360] U.S. Department of Health and Human Services, Public Health Service, Agency for Toxic Substances and Disease Registry, "Health Consultation: Kenilworth Park Landfill—Southside NE Washington, D.C.," https://www.nps.gov/nace/learn/management/upload/2006-ATSDR-Health-Consultation.pdf (accessed November 27th, 2019).
[361] Ibid. The document clarifies that exposures to PCBs, PAHs, and heavy metals were higher in the Kenilworth neighborhood than soils in other parts of the city.

Above is the cover image for an instructional photographic essay on solid waste management produced by the Environmental Protection Agency. It shows sanitation engineers involved in the process of dumping trash prior to covering it with incinerator ash. From U.S. Environmental Protection Agency, "Burn, Bury or What?" *Filmscripts on Solid Waste Management* (Washington: Environmental Protection Agency, 1972), https://nepis.epa.gov/Exe/ZyPDF.cgi/910210VL.PDF?Dockey=910210VL.PDF (accessed March 12th, 2020).

The primary envirotechnical obstacle that residents of Kenilworth Courts faced stemmed from the siting of the complex. Unlike at Lincoln Heights and Barry Farms, however, the residents of Kenilworth Courts did not contend with erosion or flooding as much as they dealt with air pollution from the nearby dump. Still, the NCHA clearly engendered a good deal of environmental injustice by choosing the site. It was limited by its financial situation, but the Authority still purchased the site and subjected its residents to years of environmental nuisances like smoke, soot, and ash. The NCHA could do little to rectify this situation. Throughout its history, while it did not contend with a centralized municipal government, it did have to deal with other agencies that sometimes worked at cross-purposes. The NCHA found that it was not, in fact, the administrator of the envirotechnical regime at Kenilworth Courts. The sanitation engineers operated the collection, transportation, dumping, and burning of trash at the site. Although the operation of the envirotechnical system created environmental problems for nearby residents, they were not the primary concern of the sanitation engineers who administered the system.

Decent, Safe, and Sanitary? The Legacy of Environmental Injustice at Kenilworth Courts

"All I want is for everyone here to live in a decent, safe, and sanitary community, not in misery", said Kimi Gray in 1980.[362] Gray, had long rented from the NCHA. Over the course of the previous fifteen years, Gray had witnessed the deterioration of what would be her final home, Kenilworth Courts. The nearby Kenilworth Landfill had plagued the complex until 1968, three years after Gray moved into an apartment in the complex. During her remaining years at Kenilworth Courts, Gray would dedicate her life

[362] Edward D. Sargent, "City Face: Kimi Gray's Dream Project," *The Washington Post*, September 25th, 1980.

to the notion that residents of public housing units deserved the right to live in, as she put it, a decent, safe, and sanitary community.[363]

Gray was well positioned to speak on the deteriorating nature of Kenilworth Courts and the rest of the city's public housing stock. She had been raised in units owned by the NCHA, and finally made Kenilworth Courts her permanent home in 1965.[364] Her years in Kenilworth were, for the most part, spent cramped in small apartments with her five children. Despite the hardships she endured, Gray became both a local and national expert in the affairs of public housing residents. In 1980, she received Congressional approval to form the Kenilworth-Parkside Resident Management Corporation, which granted residents of Kenilworth Courts the right to run their own complexes. In her neighborhood, Gray was known to most of the community as a watchdog and advocate, protecting the interests of her neighbors and working to build pathways towards economic advantages, such as a college preparatory program called "College Here We Come."[365] A 1978 article in the *Washington Post* stated that "Kimi Gray… is something of an institution at Kenilworth Courts, off Kenilworth Avenue in the far reaches of the city's Northeastern quadrant. From her yellow, plastic-covered arm chair she keeps her fingers on the pulses of the project and its 3000 or so people."[366] Gray's work continued into the 1980s, as she "patrol[led] the Kenilworth-Parkside development like a mother bear circling her cubs. Her voice erupt[ed] out of her slow-moving body like a volcano: one moment soft and low, the next exploding in a shout, the next dissolving in deep, rich laughter. Sitting at her desk or behind the wheel of her ubiquitous van, wearing her jewelry and her bright yellow dresses, she br[ought] the full force of her personality to bear on everyone who crosse[d] her path."[367] Nationally, Gray pioneered and promoted the tenant self-management approach to public housing, which prompted quicker repairs and more efficient financial management in public housing across the country.

Gray's obituary, published a few days after her death on March 1st, 2000, noted that "[w]hat [Gray] saw was hopelessness. The maze of unkempt streets, lack of city

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[363] Louise Estrada, "Public Housing Advocate Kimi Gray Dies," *The Washington Post*, March 4th, 2000.
[364] Ibid.
[365] Ibid.
[366] Lewis M. Simons, "A Poverty-Scarred World of Aner and Frustration," *The Washington Post*, March 31st, 1978.
[367] David Osbourne, "They Can't Stop Us Now," *The Washington Post*, July 30th, 1989

services, and private enterprises left many in Kenilworth feeling isolated from prosperous neighborhoods in Northwest Washington."[368] No wonder, then, that Gray emphasized the importance of providing a "decent, safe, and sanitary community." For too long she and her neighbors had suffered from deteriorating urban infrastructures. Her activism and enthusiastic work in the Kenilworth neighborhood was often centered on rebuilding features of the urban environment in order to bring about decent, safe, and sanitary public housing. In 1986, for example, Kimi Gray seethed at the architectural firm hired to repair the aging Kenilworth Courts. As reported in the Washington Post, during this meeting, "[a]s they unfolded their sketches and presented their plans, Kimi's anger grew. Where were the plans for a new heating plant? What about the underground water pipes that kept bursting?"[369] In a 1990 interview, Gray referenced the sorry state of the domestic and community environment in Kenilworth Courts. "Our conditions were deplorable. I mean, roofs were literally caving in, trash pickup was outrageous[.]"[370] She had spent most of her life in the insalubrious conditions offered to some of the poorest residents of Washington DC.

Kimi Gray lived in the neighborhood that planners like Ihlder had built. She witnessed the deterioration of the land and water around Kenilworth Courts, and sought to direct public housing in a way that would provide more than just a shelter for residents. Furthermore, in Gray's mind, public housing was symbolically connected to the long shadow cast by slavery. "I want to own the plantations[,]" Gray stated in a 1980 profile for the *Washington Post*. "[R]epeating for emphasis," Gray continued, "[y]es, the plantations. That's what public-housing communities are, aren't they?"[371] Gray saw in her home not a grandiose symbol of the successes of the United States' approach to housing the urban poor, but rather a chance to rectify past mistakes, and an opportunity to repair some of the historical wrongs committed against African Americans. These modern plantations, according to Gray, had been built and managed by whites. They physically segregated black residents in unsanitary places far from the downtown core.

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[368] Estrada, "Public Housing Advocate Kimi Gray Dies."
[369] Osbourne, "They Can't Stop Us Now."
[370] Kimi Gray interviewed on CSPAN, "Washington Profiles," January 11th, 1990, https://www.c-span.org/video/?10699-1/life-career-kimi-gray.
[371] Sargent, "City Face: Kimi Gray's Dream Project."

At least, Gray hoped, through her efforts she could build something more habitable through tenant action.

Indeed, Gray was able to marshal her tenant organization to make some basic improvements in the landscape. She made sure that trash was collected more frequently, which reduced litter and vermin in the immediate surroundings of Kenilworth Courts. Her maintenance workers responded far more quickly to cracked plaster, drainage backups, and other structural issues than the NCHA had previously. By 1993, Katherine Boo, a reporter for *The Washington Post* was describing Kenilworth Courts as "a model of innovation[.]"[372] Kenilworth Courts was a model of innovation in large part because it awarded basic control over housing and its surroundings to the tenants themselves.[373]

In assessing whether or not Kenilworth Courts met housing planners' ideals of decent, safe, and sanitary housing, it is important to consider the complex in relation to its surrounding environment. This means considering longstanding patterns of environmental racism in the Kenilworth neighborhood. The story that emerges from this historical analysis reveals that Kenilworth Courts did more to maintain patterns of environmental injustice than to address and reverse them. Patterns of unequal land distribution that had been common in the nineteenth and early-twentieth centuries were repeated in the site selection for Kenilworth Courts. Black residents of the complex contended with the smoke, soot, and ash from the Kenilworth dump. Those patterns were physically built into the landscape as the NPS constructed Kenilworth Park, which was intended not for nearby residents who had suffered from decades of environmental

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[372] Katherine Boo, "Stairway to Hell: Squalor and Squatters in D.C.'s Worst Project," *The Washington Post*, April 18th, 1993.

[373] Kimi Gray's lifetime of advocacy was premised on her political education. That education was a product of her long experience negating the deteriorating environment of Kenilworth Courts and learning about effective ways to solicit responses from the NCHA. In that way, the environment was an active force that shaped Gray's understanding of the problems that she and other renters faced. The environment was also something to rally around. Trash collection programs, as mundane as they might appear, helped to give residents a role in the management of their homes as well as improving the aesthetic appeal of public housing. As Rhonda Williams put it in her oral history of women's lives in Baltimore's high-rise public housing complexes, "Public housing did increasingly become disreputable in the eyes of much of the American electorate. And, in many cases, it became simply unlivable for tenants. But it also provided a measure of subsistence and a political context in which some low-income black women educated them-selves about their rights." Rhonda Y. Williams, *The Politics of Public Housing: Women's Struggles Against Inequality* (New York: Oxford University Press, 2004), 8.

injustices, but rather for residents from far-flung, and wealthier parts of the District of Columbia, who had contributed their own trash to the neighborhood for years and years.

Conclusion: Kenilworth Courts and the Postwar Envirotechnical Landscape

Upon its completion, National Capital Housing Authority executives expected that Kenilworth Courts would serve as a decent, safe, and sanitary dwelling for low-income residents of Washington, DC. It possessed modern amenities, appliances, and was considered a jewel of the housing program in the nation's capital. Foreign dignitaries and local politicos were invited to tour the facilities and see what public housing agencies in the United States could accomplish.

Yet the existence and operation of the Kenilworth dump undermined housing planners' pursuit of decent, safe, and sanitary housing. The fact of the matter was that as late as 1980, Kimi Gray stated that Kenilworth was not decent, nor safe, nor sanitary. The streets of her community were littered with trash, city services failed to accommodate the needs of Kenilworth residents, and the legacy of the Kenilworth dump remained long after it was turned into a park.

The story of Kenilworth Courts emphasizes the physical nature of environmental injustice. Justice demands equality, but this clearly was not achieved in the history of sanitation in metropolitan Washington. The city's sanitation engineers administered a system that allowed the streets in more economically prosperous section of Washington to stay clean. Simultaneously, Kenilworth became dirtier and dirtier, as trucks streamed along the Kenilworth Freeway and deposited their loads nearby Kenilworth Courts and other sections of the neighborhood. Physically Kenilworth was connected to the infrastructures that Washington's sanitary engineers built to manage its waste. Yet the process of waste disposal itself made these connections invisible. Residents threw out their trash and perhaps saw trucks empty their bins once or twice a week, but after the truck left their view, their waste was left their mind. As the invisible administrators of the sanitary system, engineers accrued significant power over the metropolitan landscape, controlling the boundaries, expansion, operation, and closure of landfills and dumps. The story of Kenilworth Courts shows what happened to those communities that did not benefit from the invisibility of waste, but instead dealt with its disposal in visible and

tangible ways. For most residents of Northwest Washington and other parts of the city, Kenilworth was far removed, perceptively. It was across the Anacostia, in some corner of Northeast that had nothing to offer for visitors except a major dump.

Yet even after Kenilworth Park was opened, its design served to further distance the Kenilworth neighborhood and its public housing complex from residents on the other side of the river. The engineers did not build the park with residents of Kenilworth Courts in mind. This is apparent in the design of the park itself. First, a chain link fence runs around the perimeter of the Kenilworth Aquatic Gardens. The only entrance is on a paved road that lacks sidewalks for cyclists or pedestrians. The road ends, of course, at a parking lot before the welcome center in the front of the Aquatic Gardens. Kenilworth Park sprawls out beyond a large tree line that obscures most of the residential areas to the east of the park. One long gravel drive runs around the perimeter of Kenilworth Park before branching on to the main bike path along the bank of the Anacostia, far from the homes and public housing complex in the residential area of Kenilworth. Finally, while the Kenilworth Park and Aquatic Gardens runs along the east bank of the Anacostia, the National Arboretum can be found just across the river, on the west bank. The placement of these parks, their lack of integration with the surrounding neighborhood, and the long history of the erasure of the communities east of the Anacostia serve to further distance Kenilworth Courts from the minds of more prosperous Washingtonians. When they drive to Kenilworth Park or the Aquatic Gardens, residents from other parts of metropolitan Washington might encounter the complex briefly, as they pass through the area after exiting the Kenilworth Avenue Freeway, but they quickly reach their destination: the oasis of green that runs along the eastern bank of the Anacostia. When they leave their vehicles or briefly dismount their bicycles to take in the scenery of this sequestered Washington park, visitors from other parts of the city stand on over two stories' worth of their own historical refuse that was dumped, burned, compacted, and landscaped as residents of Kenilworth Courts took in the fumes and the odors and the unsightliness of the operation.

The story of Kenilworth Courts shows how a simple question of siting could lock in conditions that undermined housing reformers' pursuit of decent, safe, and sanitary conditions for low-income residents of Washington. Once considered by executives of

the National Capital Housing Authority to be the crowning achievement of their program, the Kenilworth Courts complex quickly deteriorated as the dump to its west grew in size. In the postwar period, the NCHA was restricted in the types of sites it could choose. More of eastern Washington, D.C. had been developed. In turn, the NCHA looked to some of the places that had not yet been extensively built up. Kenilworth Courts, located nearly adjacent to a dump, was one such place. This was still an envirotechnical obstacle tied to siting, but unlike the shifting terrains of earlier complexes, Kenilworth Courts suffered from the operation of a nearby envirotechnical system. The NCHA could do little to challenge the sanitation engineers who operated the dump, because the engineers, in turn, were at a loss for places to dispose of mounting waste in the District of Columbia. Siting still mattered greatly for the postwar project in Kenilworth, and the obstacles of the location—the smoke and fumes—endangered the residents of that complex.

The story of Kenilworth Courts is also a clear case of how environmental injustice arose from the envirotechnical obstacle of siting. Even before the NCHA built its complex there, black residents had been restricted to the same spots near the marshy banks of the Anacostia River. By siting Kenilworth Courts in that location, the NCHA both maintained older forms of environmental segregation and amplified their consequences for the hundreds of families brought to that location. Furthermore, the NCHA chose a location in Kenilworth that sanitation engineers had chosen to provide for the cleanliness of other parts of the city.

Siting in the postwar context posed slightly different types of obstacles than during the Second World War. The NCHA no longer had wide-open spaces on which to build. Instead, it had to contend with other agencies that had carved out their own parts of the metropolitan landscape. In the case of Kenilworth Courts, the NCHA decided to build a complex nearly adjacent to a large dump. While the buildings there did not deteriorate as quickly as the wartime projects, residents still suffered from the nearby operation of a different envirotechnical system. The two systems were incompatible, given their proximity to one another. But the NCHA never challenged the ability of the sanitation engineers to continue burning trash. Instead, it left its tenants to deal with the smoke and ash. Kenilworth Courts was not decent, safe, or sanitary because it was sited too close to an open burn dump.

Even after Kenilworth Park was built, questions about environmental injustice remained. The park was not built with the interests of local residents in mind. It instead served as a retreat for the wealthier residents of other parts of Washington, who were unaware of its history. In the end, it was the residents of Kenilworth Courts themselves who tried to bring about decent, safe, and sanitary conditions in their small section of northeast Washington. Kimi Gray's tenant management organization was indeed somewhat successful in doing so—repairs were handled more quickly and rents collected more successfully under her leadership—but the obstacles that they faced in their surroundings were difficult to surmount. In the end, the envirotechnical obstacles of the Kenilworth site undermined housing planners' ability to bring about their vision for decent, safe, and sanitary housing.

Chapter Seven

Cracks in the Façade, Smoke from the Highway: Sheridan Terrace and the Many Obstacles Posed by Siting

By the end of the 1950s, the National Capital Housing Authority had succeeded in laying the groundwork for the development of eastern Washington, D.C. During the planning process for Barry Farms in 1940 and 1941, the NCHA confronted the fact that private developers and the City of Washington had long struggled with the difficult terrain around the planned site. Sewer lines, roads, water pipes, electrical wires and other such infrastructures that were vital for decent, safe, and sanitary dwellings were scarce in much of the region. The NCHA would help extend those infrastructures into eastern Washington by modifying the landscape and erecting large housing complexes across the region. From sites like Barry Farms, Lincoln Heights, and Highland Dwellings, the infrastructures necessary to support housing developments could be extended further into the region.

In the years following the construction of wartime developments across Washington, the population of the part of the city east of the Anacostia and Potomac Rivers grew dramatically. In 1940, 51,839 people resided east of the rivers, which was 7.8% of the entire District of Columbia population.[374] By 1950, the region's percentage of the total city's population increased to 19%, at 151,810 residents.[375] The population increased again in 1960, to 182,120 people, or almost 24% of the District of Columbia population.[376] Clearly over a short period of time eastern Washington, D.C. grew from a less-populated section of the city separated by a large river into an urbanized place in its own right.

With the increasing numbers of people moving to eastern Washington, D.C. came changing racial demographics as well. In 1940, at the start of the NCHA's work in the region, white residents constituted about two-thirds of the total population in eastern Washington, D.C., and black residents counted for about one-third. The ratio of black-to-

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[374] DCGISopendata, "Census Tracts-1940," *Open Data DC*, https://opendata.dc.gov/datasets/census-tracts-1940 (accessed May 15th, 2020).
[375] DCGISopendata, "Census Tracts-1950," *Open Data DC*, https://opendata.dc.gov/datasets/census-tracts-1950 (accessed May 15th, 2020).
[376] DCGISopendata, "Census Tracts-1960," *Open Data DC*, https://opendata.dc.gov/datasets/census-tracts-1960 (accessed May 15th, 2020).

white residents remained much the same in 1950, but by 1960 black residents constituted 54% of the regional population while whites accounted for 46%.[377] Furthermore, by the 1960s, whites were heavily clustered in the southern tip of Southeastern DC as well as neighborhoods adjacent to suburban communities in Prince George's County.

The demographic shifts taking place in eastern Washington, D.C. from the 1940s through the 1960s are important for two reasons. First, by the time later complexes like Kenilworth Courts and Sheridan Terrace were built, there was less and less suitable land available. Private developers, the NPS, and various metropolitan agencies had taken control of much of eastern Washington in order to build profitable developments, or to provide amenities for new neighborhoods. This explains in part why Kenilworth Courts was built next to a dump, and why Sheridan Terrace—the subject of this chapter—was built in an old streambed next to a major parkway.

Second, the NCHA was instrumental in white flight. Public housing historians as well as urban historians more generally accept that local and federal policymakers, as well as real estate interests, drove the racialization of metropolitan space in the postwar period. Black families were locked out of the generous federal aid policies that promoted suburban homeownership.[378] Suburban politics, in turn, became oriented around protecting a sense of property ownership and rights that were products of housing policies that favored whites. Within cities, the NCHA was one agency among hundreds across the country that carved metropolitan spaces into distinct racial niches.[379] Even if its leadership had good intentions, it still participated in a program that devalued black land and encouraged whites to move further into the suburbs. This meant that the NCHA played a role in the dramatic transformation of the suburban environment that was captured so well by Adam Rome in *The Bulldozer in the Countryside*. Suburban environmental changes and urban environmental changes were inextricably linked as

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[377] These figures are taken from the same datasets used above in footnotes 1-3.
[378] David M.P. Freund, *Colored Property: State Policy and White Racial Politics in Suburban America* (Chicago and London: University of Chicago Press, 2007), 99-139.
[379] N.D.B. Connolly refers to New Deal liberalism as Jim Crow liberalism. He contends that the New Deal and postwar housing programs laid the groundwork for white prosperity while systematically devaluing black land. The white community of South Florida moved to wealthy and prosperous suburbs, while government programs worked in tandem with capital to profit off of black communities within cities. See N.D.B. Connolly, *A World More Concrete: Real Estate and the Remaking of Jim Crow South Florida* (Chicago: University of Chicago Press, 2014), 73-99.

projects like the NCHA's public housing construction restructured metropolitan along racial lines. White communities moved to the suburban ideal *en masse* as black families were subjected to the severe envirotechnical obstacles of public housing complexes.[380]

Sheridan Terrace was built in one of the last open spaces available for large-scale development in eastern Washington, D.C. Construction began in 1957 and would last for about three years. It was located next to Suitland Parkway, a major road connecting the suburban communities of central Prince George's County—as well as Andrews Air Force Base—to downtown Washington, D.C. The entire complex was built in a long line of what counted as high-rises for the District of Columbia. Each building was about six or seven stories tall. The southern end of the complex abutted a sizable hill, which was likely once a wooded ravine along the bank of Stickfoot Creek. The creek, which ran along the northern edge of what would become the Barry Farms complex on its way to the Anacostia had been covered during sewer construction in the second decade of the twentieth century.[381]

Sheridan Terrace's history shows that siting still mattered in the postwar period. With few places left to build, the NCHA once again chose a site that was prone to air pollution, as cars rumbled along the adjacent parkway at all hours of the day and night in and out of downtown Washington, D.C. Furthermore, because it sat on a terrain that sloped downwards towards what was once a creek, the complex was located both at a low elevation and in a space where water from the hills to the east would fall during heavy rainstorms. In addition to the problem of air pollution, the NCHA would also have to contend with a building sliding during construction and grading issues.

The history of Sheridan Terrace reveals that the NCHA continued to confront environtechnical obstacles pertaining to siting in the postwar period. The NCHA was constrained both by institutional pressures—the RLA continued to displace residents who

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[380] Kenneth Jackson provides a social and architectural history of the suburban ideal in his seminal 1985 monograph *Crabgrass Frontier: The Suburbanization of the United States* (Oxford and New York: Oxford University Press, 1985).

[381] Based on the city's continued solicitation for sewer construction contracts during the 1920s, it is reasonable to presume that Barry Farms was not yet connected to the Stickfoot sewer line, perhaps because of its higher elevation. The line was likely intended for the slightly more densely populated Anacostia neighborhood. See Subcommittee of House Committee on Appropriations, *District of Columbia Appropriation Bill, 1917*, 64th Cong., 1st Sess., 1916, 147.

were in need of housing—as well as the unavailability of space.[382] The residents who were displaced by those activities needed somewhere to go. Not willing to displace even more people by building over extant communities as it had done during the Second World War, the NCHA instead found what little suitable land it could. In the end, the NCHA would be unable to sufficiently address the envirotechnical obstacles at Sheridan Terrace, which rendered its housing indecent, unsafe, and insanitary, and threatened the physical health of its tenants.

Building Sheridan Terrace: The NCHA Once Again Confronts the Topography of Eastern Washington, D.C., 1956-1960

From 1956 through 1957, the NCHA began to rapidly expand its housing program, letting contracts for six projects, including Sheridan Terrace, which would add 1421 new units to the city's housing stock. The housing was long overdue, since ongoing urban renewal projects across the city—and especially those in Southwest Washington and the Adams-Morgan neighborhood, had displaced thousands of residents. Pressure from the Redevelopment Land Agency and other city offices to rehouse displaced residents mounted throughout the 1950s and 1960s. Sheridan Terrace and Kenilworth Courts, built in the same year, were part of the NCHA's attempts to ease the housing crunch.

The first contracts for construction at Sheridan Terrace were let on November 13th, 1956.[383] The NCHA was apparently unable to find an appropriate contractor for the project because during a meeting on March 26th, 1958, James Ring, then serving as the director of the NCHA, mentioned that a round of contract bids had been advertised once again in December of 1957.[384] Ring stated that the contracts were for building 183 units, spread throughout eleven buildings, "on a hilly site on Sheridan Road between Howard

[382] For example, the RLA decided to completely demolish the very densely populated Southwest Urban Renewal Area, which constituted 560 acres. The residents would need to move somewhere, and the NCHA was expected to provide new dwellings for the displaced families. See Francesca Russello Ammon, "Commemoration Amid Criticism: The Mixed Legacy of Urban Renewal in Southwest Washington, D.C.," *Journal of Planning History* 8, no. 3 (August, 2009), 185.
[383] "NCHA Lets Contract for New Project," *The Washington Post and Times Herald*, November 14th 1956.
[384] "National Capital Housing Authority Meeting, Wednesday, March 26th, 1958," Folder Duplicate Minutes—January 1954-May 1960, Box 1, National Capital Housing Authority, Minutes, 1954-1968, ADC.

and Pomeroy Roads."[385] The site was fairly uneven, since it sat in a narrow valley that had been carved by Stickfoot Creek. At the southern end of the complex was a seventy-foot embankment, a legacy of Stickfoot Creek's original course. Of course, this was not the first time that the NCHA committed to a project on the hilly terrain of eastern Washington, D.C. It had contended with the envirotechnical obstacles that siting posed since the 1940s.

The NCHA executive board had reason to be wary about the site on which Sheridan Terrace was going to be built. The board had commissioned studies of the site in the past. During the war years, the USHA shielded the NCHA from such careful attention to the landscape by blocking the District of Columbia's intervention. Even though its contractors at Lincoln Heights and Barry Farm suggested that outside advisers should have been recruited, wartime housing demands outweighed judicious study of the landscape. Furthermore, the NCHA no longer had federal power behind its efforts to build housing, and had to cooperate with various agencies working in the District of Columbia. It also had to conform to the city building code. For Sheridan Terrace the NCHA was willing to take the time and resources to investigate the site and learn more about the environmental features that were not immediately apparent, such as soil quality, hydrology, and topography.

The NCHA's decision to hire an outside expert was prompted by the District of Columbia Department of Licenses and Inspections. Months after the NCHA filed a permit for construction on July 3rd. 1957, the DCDLI questioned the design of two buildings located at the north end of the site that would be supported on concrete caissons. Because of the slope of that part of the site, the DCDLI worried that the soil might prove unstable and the shifting weight of the building above might shear the caissons, which would let water into the foundations as they were being laid.[386] In other words, if the soils shifted, they might bring the base of the structure with them, while the caissons would stay in place. Even a little slippage had the potential to fracture the caissons, contributing to flooding within the buildings.

[385] Ibid.
[386] Ibid., 3-4.

The executive board enlisted Dr. Edward S. Barber, "a well-known soil mechanics engineer."[387] Barber's recruitment showed that the NCHA had a better working relationship with the municipal government by the 1950s. In some of the NCHA's Second World War-era developments, the city government asked the NCHA to let municipal inspectors access its properties, which the Authority refused with the backing of the USHA. In those instances, the District's Board of Commissioners had expressed similar concerns about the viability of large-scale construction projects, given the rolling terrain in eastern Washington, D.C.

Barber found that the northern end of the project area was suitable for the apartment buildings that the NCHA hoped to construct. "[I]n his opinion," Ring reported to the NCHA executive board, "there was no danger of slippage at the north end of the site that would endanger those buildings that were to be constructed on concrete caissons[.]"[388] But, upon investigating the southern end of the project, beneath the terraced hill to the east, Barber concluded "there was some evidence of slippage at the southern and more hilly portion of the site."[389] In his investigation of the Sheridan Terrace plot, Barber observed that some slippage may have occurred, which could threaten the buildings with future flooding.

Barber offered some recommendations, which the NCHA did its best to take up. He suggested that the land to the east of the buildings on the southern end of the slope should be re-graded to a 2.5 percent slope, which was less steep than the original grade. This meant that the NCHA would have to re-grade the land under its control that faced the formidable embankment next to the southernmost dwellings. Furthermore, Barber suggested that the basements in those complexes should be fashioned out of reinforced concrete, rather than cinderblock as was initially intended.[390] Concrete would prove more resistant to water, and allow less of it to penetrate the complexes at the base of the hill while providing a sturdier base.

The NCHA took Barber up on his recommendations, even though it meant that the agency had to purchase about ninety additional feet of clearance in the direction of

[387] Ibid.
[388] Ibid.
[389] Ibid.
[390] Ibid. Poured concrete is more resistant to outside pressure from soil and water.

the large embankment. At the time of Ring's report, the NCHA had three of the five homeowners who would be affected willing to sell to the agency, while suggesting little difficulty in acquiring the rest of the property from the two remaining owners. There was some concern from a "Mr. Nolan" who served on the NCHA executive board. This was likely a misspelling of John Nolen Jr.'s last name. In 1958, when this meeting took place, Nolen served as the Director of the National Capitol Planning Commission, the successor agency to the NCPPC.[391] Nolen "cautioned that, once a slope is disturbed, it opens up to the seepage of water and presents a problem of continuous maintenance."[392] The NCHA had firsthand experience with that problem dating back to the early 1940s, when, during the construction of Barry Farms, heavy rains disturbed an embankment at the head of a cut that the contractors had made. The disturbance damaged a wall that belonged to the St. Elizabeth asylum.[393] The record does not indicate that Nolen received a response from the rest of the board about his concerns.

As was the case for the Second World War era homes, the District of Columbia licensing office raised concerns about the ways that the landscape could influence the structural stability of the complexes. Since the end of the Second World War, however, the NCHA had been willing to allow outside inspectors and experts to view their projects and suggested changes to the building methods in order to reduce the likelihood of structural damage. Apart from Sheridan Terrace, this new approach was evident in the case of Valley Green, which was built about six years later.[394] In 1964, the NCHA's executive director noted that there were erosion problems at Valley Green that affected the stability of the housing stock, and suggested that the cost of remediating the

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[391] National Capitol Housing Authority, *Annual Report of the National Capitol Housing Authority for the Fiscal Year Ending June 30th, 1952* (Washington: 1952), 20. The other *ex officio* board members were the Chair of the Urban Planning Office in the General Services Administration, the President of the Board of Education, the President of the Board of Commissioners, the Chair of the District of Columbia Redevelopment Land Agency, and the Chair of the District of Columbia Patrol Board.
[392] "National Capital Housing Authority Meeting, Wednesday, March 26th, 1958.
[393] National Capital Housing Authority, Report of the National Capital Housing Authority for the Ten-Year Period 1934-1944 (Washington, D.C.: GPO, 1944), 58.
[394] Valley Green was located about four-tenths of a mile to the northeast of Highland Dwellings in far Southeast DC. The complex consisted of "32 pink-brick buildings clinging to 22 acres of bare Anacostia hillside." See William F. Powers, "Valley Green: On the Verge of a New Life," *The Washington Post*, June 20th, 1992.

landscape should be accounted for in the budgeting for that project.[395] Despite the attention that the NCHA gave to these issues, however, the agency would continue to face structural deterioration that stemmed from the envirotechnical obstacles inherent to the sites that it chose.

Sheridan Terrace began accepting residents in December of 1959. Although construction on the entire complex was not yet complete, with some buildings on the southern end of the property still being built, the NCHA was eager to begin collecting rents from the completed buildings in the north. The board debated having an opening ceremony, but some considered the event to be fairly unimportant. Executive Director James Ring disagreed, claiming, "the opening at Kenilworth Courts proved of outstanding worth."[396] Ring convinced the board of the need to have an opening ceremony, although a small one "because of the limited facilities in the area."[397] Ultimately, the executive board decided to hold an opening ceremony at ten in the morning on December 11th, 1959.[398]

The opening ceremony did not mark the end of construction troubles at Sheridan Terrace. Poor coordination with the District of Columbia Department of Highways meant that the NCHA was unprepared when the city suddenly modified Sheridan Road. The road ran along the western side of the complex, and was an access route to local roads for cars travelling in the westbound lanes of Suitland Parkway towards downtown Washington. Anticipating increased traffic from the Parkway, the City of Washington decided to re-grade and widen Sheridan road. Their efforts left "a 14-foot vertical embankment that ran 300 feet along the front of the project, rendering 16 units unsafe for occupancy", according to *The Washington Post*.[399] Sixteen housing units that once abutted Sheridan Road were now completely inaccessible to tenants, who could not be expected to scale a fourteen-feet-tall embankment. The NCHA now had to find temporary homes for the displaced residents.

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[395] National Capital Housing Authority Meeting, Wednesday, January 22nd, 1964, Duplicate Minutes—January 1954-May 1960, Box 1, National Capital Housing Authority, Minutes, 1954-1968, ADC.
[396] National Capital Housing Authority Meeting, Wednesday, March 26th, 1958.
[397] Ibid.
[398] "Public Housing Development to be Dedicated," *The Washington Post, Times Herald*, December 11th, 1959.
[399] John J. Lindsay, "Somebody Goofed in 'Road Repair,' Adding Thousands to Housing Costs," *The Washington Post, Times Herald*, July 8th, 1961.

Members of the NCHA Executive Board were understandably upset about the impromptu re-grading, which took place adjacent to the structures that Barber warned might be susceptible to slippage. Any disruption to the grade threatened to add to the cost, effort, and time taken to re-grade the eastern edges of southern Sheridan Terrace. Furthermore, the mistake might have been avoided, but apparently the Highway Department had misplaced an important map that showed the grades for the area that the City of Washington and the NCHA had already agreed on.[400] Furthermore, the NCHA had the Highway Department's assurance that re-grading, if necessary, would take place on the opposite side of Suitland Parkway.[401] In response to the construction activity undertaken by the city's Department of Highways, the NCHA quickly erected a fence and retaining wall, meant to secure the perimeter of its complex and prevent erosion from the new embankment.[402]

The disputed re-grading is difficult to see today. There is a culvert at the southern end of the complex, where Pomeroy and Sheridan Roads meet. This may be the legacy of the work done by the Department of Highways. In any case, the embankment was the last major hiccup in the effort to construct Sheridan Terrace. All of the units would soon be open to occupancy.

Celebrating Sheridan Terrace: Architectural Innovation in the Postwar Period

On New Year's Eve, 1961, architect Joseph Miller said of Sheridan Terrace that "the best tribute that can be paid to Sheridan Terrace is that it doesn't look like public housing."[403] Miller was quoted during an awards ceremony for fifteen public and private housing developments selected by the Metropolitan Washington Board of Trade for their architectural distinctiveness. The Board of Trade was a prominent and powerful association of business interests in the nation's capital. Miller was a member of the architectural firm Brown, Chapman, Miller, and Wright. His firm was to share the award

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[400] Letter from the Comptroller General of the United States to the US House of Representatives, "Report on Audit of the National Capital Housing Authority (NCHA) Fiscal Year 1960," Washington, US GPO, 1961, 55. Available online at https://books.google.com/books?id=idIjAQAAMAAJ&pg=RA36-PP33&lpg=RA36-PP33&dq#v=onepage&q&f=false (accessed November 29th, 2019).
[401] Ibid., 56.
[402] Ibid.
[403] Luther P. Jackson, "New Garb Wins Housing Award," *The Washington Post, Times Herald*, January 1st, 1962.

with Max Wertheimer, who owned the building company Wertheimer Construction Corporation, and Walter E. Washington, then serving as the Executive Director of the National Capital Housing Authority. During the awards ceremony, Miller highlighted his designs, which included grilled wall blocks to prevent an institutional aesthetic and to keep drying laundry from the sight of motorists on Suitland Parkway, light-colored bricks, and "a number of foot bridges that extend from near the top of a sloping hill to the upper stories of the apartments."[404]

By Bob Burchette, Staff Photographer

Architect Joseph Miller, in front of award-winning Sheridan Terrace Apartments.

Screenshot from the article referenced above. Luther P. Jackson, "New Garb Wins Housing Award," *The Washington Post, Times Herald*, January 1st, 1962.

On the surface, then, Sheridan Terrace appeared to conform to the conditions of the surrounding area. Miller even appeared to accommodate the variations in the elevation of the site by building pedestrian bridges from the top of the steep hill to the top floor units. Indeed, the *Washington Post* continued to praise the Sheridan Terrace Housing Development through the early 1960s. In September of 1962, *The Washington Post* covered the twenty-fifth anniversary of the nation's first housing renewal program. Reporter Edward Cowan interviewed Marie McGuire, who then served as the Commissioner of the PHA. McGuire had high praise for Sheridan Terrace. She stated that

[404] Ibid.

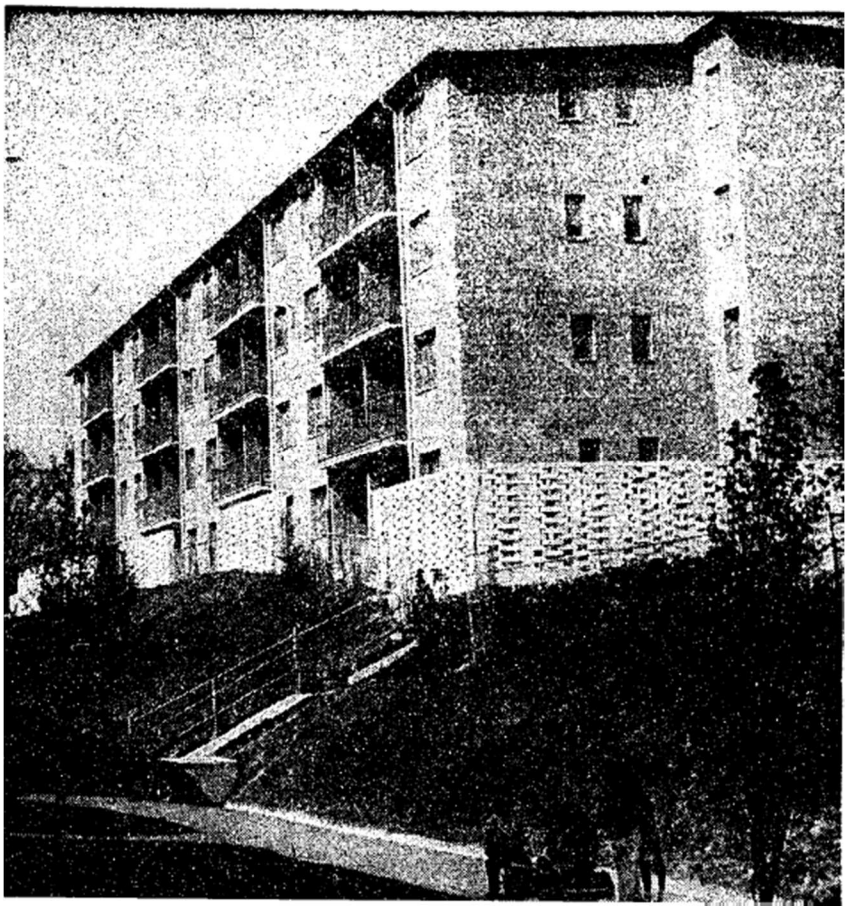
the complex was "one of the outstanding architectural achievements in the 25 years of the low-rent housing development program."[405] McGuire also noted that "[t]he 183-unit project on Sheridan [road SE] illustrates the importance of landscaping and site selection."[406]

McGuire was understandably proud of the recent work that her agency had done to support local housing authorities like the NCHA. But she likely did not know about the longer history of the site, and the many envirotechnical obstacles that the NCHA encountered as it transformed the site and built on top of it. During the construction process itself, the NCHA was informed of evidence of slippage occurring underneath its buildings because of the shifting land. Sheridan Terrace was built in a former creek bed, wedged in between a major traffic conduit and a steep embankment. Of course, what McGuire and other administrators could not have anticipated at the time were the slow forces of environmental change taking place at the site. Water flowed underground, contributing to shifting soils that invisibly threatened the stability of the building. The surrounding landscape was not a static feature of the Sheridan Terrace complex, but was instead an active and forceful agent of historical change. Environmental factors like the soil and water of particular locations undermined reformers' pursuit of decent, safe, and sanitary dwellings by slowly degrading the very foundations, walls, floors, and ceilings of public housing units. Those forces would continue to exert damage on Sheridan Terrace as it was lauded for its innovative design and aesthetic beauty.

The press heaped more praise on Sheridan Terrace in an article from December of 1962 and again in 1965. The 1962 article, titled "Public Housing Gets its Second Wind," compared the "handsome" Sheridan Terrace to the "drab projects [that] are all 'decent, safe, and sanitary[.]'"[407] The "Second Wind" to which the article's headline referred were architects' attempts to make the projects look less institutional than the first few complexes had been. The 1965 article, titled "GAO Really Has a Pile to Pick to Pieces Now" covers the General Accounting Office's investigation into the finances of the National Capital Housing Authority. The reporter Wolf von Eckard, art and architecture

[405] Edward Cowan, "Public Housing Marks 25th Year," *The Washington Post, Times Herald*, September 1st, 1962.
[406] Ibid.
[407] Wolf von Eckardt, "Public Housing Gets its Second Wind," *The Washington Post, Times Herald*, December 9th, 1962.

critic for *The Washington Post*, was skeptical about the intentions of the GAO, comparing the NCHA's program, which came in at its low budget, to the extreme expenditures of the Architect of the Capitol as it worked on the new Sam Rayburn Congressional Office Building.[408] The substance of the GAO concerns was that the PHA, and by extension the NCHA, put "greater emphasis on the environmental and esthetic aspects of housing rather than on the promotion of economy."[409]



An image of one of the buildings in the Sheridan Terrace complex, published in *The Washington Post*. This building was towards the southern end of the complex. Wolf von Eckardt, "Public Housing Gets its Second Wind," *The Washington Post, Times Herald*, December 9th, 1962.

Of course, what von Eckard, McGuire, and the accountants at the GAO saw was the completed structures. Whether celebrating or bemoaning the cost of the buildings, observers of Sheridan Terrace saw only the finished buildings, and, with the exception perhaps of McGuire, did not know about the extensive landscaping that went into

[408] Wolf von Eckard, "GAO Really Has a Pile to Pick to Pieces Now," *The Washington Post, Times Herald*, February 7th, 1965.
[409] Ibid.

construction in such a hilly part of the city, or of the problems that the NCHA faced as it tried to build lasting housing in Southeast Washington. And, invisibly, the terrain underneath Sheridan Terrace continued to shift, stressing the structures and threatening their undoing.

It is important to reiterate, of course, that Sheridan Terrace was not one of the wartime projects. Although all of the buildings were intended to be permanent features of the eastern Washington, D.C., urban landscape, there was an apparent stylistic and material difference between the wartime projects like Lincoln Heights, Barry Farms, and Highland Dwellings, and the later projects like Kenilworth Courts and Sheridan Terrace. Without the PHA breathing down the necks of the NCHA executive board members, but with a great deal of funding still in place, housing planners were free to experiment with modern designs and try to make public housing look like its private counterparts. But no matter how much the NCHA planners tried to make public housing look appealing, the fact of the matter was that they were still stuck building in some of the least desirable sites in the city, much as they had been during the Second World War. Kenilworth Courts was built nearly adjacent to an open burn dump. Sheridan Terrace was built at the bottom of a former creek bed. After just thirty years Sheridan Terrace went from a critically renowned symbol of housing planners' ability to lift the city's poor out of poverty to a "stairway to hell."[410] The envirotechnical landscape of public housing had much to do with that transformation.

Suitland Parkway: Eastern Washington, D.C. Opens For Development

As builders worked to re-grade the landscape and erect apartment buildings on the site that the NCHA chose, as residents moved in to their new homes, and as the invisible forces of soil and water continued to shape the terrain and environment in and around Sheridan Terrace, cars continued to rumble along the adjacent parkway. Cars rushed past Sheridan Terrace on their ways to and from downtown Washington, D.C. everyday and night. The Parkway was more than a source of noise pollution. Car exhaust and lead emissions would spew from hundreds of tailpipes everyday as commuters went back and

[410] Katherine Boo, "Stairway to Hell: Squalor and Squatters in D.C.'s Worst Project," *The Washington Post*, April 18th, 1993.

forth from their homes and offices. As suburban developments proliferated in central Prince George's County during the 1950s and 1960s, the Parkway would become busier and busier. Due to its proximity to the Sheridan Terrace site, its history matters. Suitland Parkway was a major envirotechnical obstacle—a feature of the site that the NCHA found difficult to control—that undermined the health and wellbeing of the NCHA's tenants at Sheridan Terrace.

Suitland Parkway was first proposed in 1937 to aid in Washington's defense by connecting the Bolling Air Base with the Camp Springs Army Air Base, which has since been renamed Andrews Air Force Base.[411] The proposed route of the Parkway would run over what was once Stickfoot Creek.[412] Mentioned in the first chapter, Stickfoot Creek once swelled as summer and autumn rains ran from the hilly highlands of eastern Washington, D.C. into the creek, which swept through small farms on its way to the Anacostia River. The creek was largely covered, however, during the 1910s, as public health officials worked to expand sanitary infrastructure into the rough terrain east of the rivers.[413]

Construction would have to wait, however, until the federal government provided ample funds for defense purposes during the Second World War. The District of Columbia insisted that the federal government pay for the parkway because its Board of Commissioners did not expect the road to significantly increase the tax base for Southeast Washington, which limited the city's desire to take on the debt necessary to finance the project.[414] The Parkway was eventually planned and built in 1943 and 1944.[415] The final

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411 Andrews Air Force Base is where Air Force One is based. For the dating above, see United States Department of the Interior, National Parks Service, "Suitland Parkway," *National Register of Historic Places Registration Form*, NPS Form 10-900, PG 76A-22, 7-1; https://npgallery.nps.gov/NRHP/GetAsset/8367e5e4-f7c8-4727-aeea-273db303c390/ (accessed December 3rd, 2019).

412 See the map in Anacostia Watershed Society, *Anacostia Watershed Trash Reduction Plan* (Washington, D.C., December, 2008), 2-22 https://doee.dc.gov/Anacostia%20River%20Trash%20Reduction%20Plan (accessed May 15th, 2020).

413 Subcommittee of House Committee on Appropriations, *District of Columbia Appropriation Bill*, 147.

414 Ibid., 7-3. While there are many possible reasons why the city did not expect the necessary increase in the tax base to support its financing of this project, it may well be that the Board of Commissioners did not anticipate an increase in population or commerce adjacent to the roadway. In the 1940s, as mentioned in previous chapters, the portion of the District of Columbia to the east of the rivers was sparsely populated.

course of the Suitland Parkway followed a sinuous route through the District of Columbia.

Despite the sparse residential density of eastern Washington, D.C. in the 1940s, the National Capital Parks and Planning Commissioner at the time, Gen. Ulysses Grant III, was concerned about the highway construction affecting nearby homes. He noted that proper housing was needed, especially given the population surge as a consequence of wartime planning, for "people of small income."[416] He worked to ensure that few residents would be evicted along the course of the parkway, and that those who were would be spared until the last possible moment. Ultimately, however, utilitarian logic prevailed during the construction process. The planners behind Suitland Parkway agreed that, despite the pending evictions, the road would justify itself by serving "nine war housing projects immediately adjacent totaling 4000 units, of which more than 3200 are family dwellings."[417] Between 1941 and 1943, through the efforts of the NCHA and other federal agencies, the rate of development and population increased dramatically in Southeast Washington. After the NCPPC completed Suitland Parkway in 1944, expanding residential and commercial areas in the District of Columbia placed some pressure on the roadway, which saw an increase in traffic during the 1950s and 1960s.[418]

Along with the traffic came invisible polutants such as lead. Reports about the dangers of lead had circulated since the pioneering work of public health scholar Alice Hamilton. Hamilton had emerged as a key figure in the history of urban reform through her involvement in the Settlement Movement, but she also contributed significantly to the public's understanding of the hazards of lead. In 1910, at the first National Conference on Industrial Diseases, Hamilton presented her findings, which showed that younger individuals were more susceptible to lead poisoning than adults. Furthermore, she pointed out that lead entered the body through inhalation and swallowing, rather than through the skin.[419]

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[415] Ibid., 7-1.
[416] Department of the Interior, National Parks Service, "Suitland Parkway," 7-4.
[417] Ibid., 7-5.
[418] Ibid.
[419] Gerald Markowitz and David Rosner, *Deceit and Denial: The Deadly Politics of Industrial Pollution* (Berkeley and Los Angeles: The University of California Press, 2002), 12-13. Lead poisoning could cause death in acute cases in children. More often, lead poisoning attacked the organs of children at a very young age and over several decades. Its symptoms can take a long time to manifest. Children

The industry responded to those concerns with a fifty-year advertising campaign to try to convince the public that lead was safe, while conducting its own tests that demonstrated the opposite.[420] Although intrepid reporters and activists initially focused on the dangers of lead paint in homes, attacks on lead in gasoline grew in the 1950s and 1960s. Clair C. Patterson, a geochemist who had worked on the Manhattan Project began sampling polar ice cores during that period, revealing that the amount of lead captured there increased drastically after the expansion of the tetraethyl lead marked between 1940 and 1965. Patterson was one of the first lead researchers to emerge outside of the small group of lead toxicologists who had primarily relied on industry support.[421]

The lead industry resisted what became increasingly obvious to the general public and reform-minded politicians. In the late-1960s, the automotive industry found that the introduction of the new catalytic converter, which was meant to reduce pollution by converting carbon monoxide to carbon dioxide and water, was rendered less effective by leaded gasoline. Major automotive manufactures began to abandon the lead industry, which initiated its decline.[422] In 1971, William Ruckelshaus, the first EPA administrator, named lead a threat to public health.[423] Between 1976 and 1996, leaded gasoline was phased out in favor of unleaded gasoline. Over the same period there was a ninety percent drop in children's average blood-lead level.[424]

For the first fifteen years of its operation, the exhaust from hundreds of cars driving along Suitland Parkway blew towards the windowsills of residents in Sheridan Terrace, endangering the adults, and especially the children, who lived there. The noise of the roadway would have been an obvious nuisance. The pollution would have made it harder for residents to breathe, and likely contributed to poor health outcomes at the complex. But lead too was an invisible danger. It accumulated in the bodies of the children, teens, and adults at the complex, possibly creating disorders and conditions that would plague them for the rest of their lives. This was a significant envirotechnical

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who were exposed to significant amounts of lead as children could face kidney, brain, or liver diseases later in life. Ibid., 41-44; 13.

[420] Ibid., 64.

[421] Ibid., 111.

[422] Ibid., 117.

[423] Ibid.

[424] Ibid., 138.

obstacle to the health and welfare of residents of the NCHA, and it was caused by the Authority's choice of siting. That envirotechnical obstacle greatly increased the environmental burdens borne by residents of Sheridan Terrace.

Crumbling Brick: The Rapid Decline of Sheridan Terrace, 1966-1974

In September of 1966, Walter Washington found himself once again touring some of the dilapidated buildings managed by the National Capital Housing Authority. This was an important, though difficult part of Washington's job.[425] He spent much of his tenure at the NCHA trying his best to fix the increasingly obvious holes in the upkeep and maintenance of NCHA properties. On September 29th, 1966, Washington heard from fifteen tenants at Sheridan Terrace for three hours. Among their concerns were "rooms too hot or too cold [and] falling plaster."[426] There were no minutes kept of that meeting, so it is not possible to determine the exact items discussed, but what is most telling about the article that covered the meeting is that it was published just a year-and-a-half after von Eckard's piece lauding the appealing nature of Sheridan Terrace. Furthermore, Washington was meeting with Sheridan Terrace residents who had a litany of concerns about their building's quality just four years after it won an award from the Board of Trade and just five years after it was finished. Although built to last, the apartments had quickly deteriorated. What happened?

After construction ceased, neither the NCHA nor the City of Washington paid further attention to the exterior structural stability of the Sheridan Terrace complexes. Indeed, it could be that given the inconsistent elevations of the different buildings at the complex, continued settling occurred well after construction was finished. This could account for the cracking and deterioration of the plaster on the walls of some of the complexes. Of course, other factors influence the stability of plaster walls. Flooding from abandoned units—partially determined by the NCHA to be a product of erosion—contributed to at least some of the deterioration of the plaster.[427]

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[425] Washington would be appointed Mayor-Commissioner of the District of Columbia by President Lyndon Johnson in 1967 and would be elected Mayor of the District of Columbia outright in 1974.
[426] Willard Clopton, "City Housing Chief Met with Gripes at Southeast Project," *The Washington Post*, September 30th, 1966.
[427] Boo, "Stairway to Hell."

Given that the NCHA's outside expert indeed found evidence of slippage, and that the DCDLI was concerned about slippage throughout the complex, it may well be that Sheridan Terrace was built on a site that was not conducive to the construction of large apartment buildings. Cracks on walls can appear when houses settle, and houses that are built on clay soils are especially susceptible to this type of cracking. During rainy periods, clay soils expand as they hold more water, and contract as the water becomes scarce during dry seasons.[428] Furthermore, plaster retention can also be affected by loud noises, such as nearby highway traffic.[429] Furthermore, a 1975 soil study of the District of Columbia revealed that Sheridan Terrace sat on top of "well-drained soils that are underlain by unstable clayey sediment".[430] Barber's recommendations may have shored up the buildings' stability in the short-term, but it may have been possible for long-term damage to the buildings as a result of the unstable surrounding environment. Sheridan Terrace was, after all, built directly beneath a large edifice, in a former creek bed, and next to an important thoroughfare through Southeastern Washington. Siting, furthermore, and the environmental features of various sites, played significant roles in the history of other housing complexes.

It appears that the location in which Sheridan Terrace was built was not properly suited for the complex without investments in building techniques and materials that could withstand the environmental constraints at that location. It is unclear how much the NCHA actually knew about the quality of the soils at the site or the state of knowledge about how to engineer solutions to those problems in the early 1960s, but what is clear is that the NCHA chose to simply re-grade the site, which still allowed water to flow to its lowest point towards the southern end of the complex.

Meanwhile, throughout the rest of the 1960s and into the 1970s, Sheridan Terrace deteriorated. This process would continue into the 1980s, despite Mayor-Commissioner Walter Washington's 1972 promise to halt "the physical and social deterioration of Far

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[428] Marylee MacDonald, "Repairing Historic Flat Plaster—Walls and Ceilings," *Preservation Briefs 21*, US Department of the Interior, National Park Service, Preservation Assistance Division, Technical Preservation Services, October 1989, 6. Available online at https://www.nps.gov/tps/how-to-preserve/briefs/21-flat-plaster.htm (accessed December 3rd, 2019).
[429] Ibid.
[430] United States Soil Conservation Service, "General Soil Map, District of Columbia," Washington, 1975, available at https://www.loc.gov/item/76697809/ (accessed October 20th, 2019).

Southeast … within four years."[431] Washington made this promise during a bus tour of the Southeastern quadrant of the city. Kirk Scharfenberg, the reporter who covered that event for *The Washington Post*, wrote that "[o]ne of the first scheduled stops on yesterday's bus tour was the Sheridan Terrace public housing units. The old Department of Human Resources bus…shifted into a low gear to climb the hilly terrain that typifies the Far Southeast."[432] During the ride up, raising his voice to be heard above the roar of the bus engine, a reporter asked Washington about vacancies at Sheridan Terrace, and he replied that with some improvements, he hoped to fill the ground-floor units soon. Washington proudly admitted that the vacancy rate at the complex was down to twelve percent, from a high of eighty-six percent the year before.[433]

Mayor Washington's hopes went unrealized. The City of Washington, lacking the funding to fix the NCHA's large housing stock on its own, could only support patchwork efforts to improve living conditions for residents. Some relief, however, came in the summer of 1974, when the Department of Housing and Urban Development made a 100 million dollar effort to improve the public housing stock in the District of Columbia and thirty-five other municipalities. Washington expected to receive about two million dollars of that package.[434] James G. Banks, then serving as the executive director of the NCHA, promised that the federal dollars would be spent on "simple repairs, erosion control, and management-tenant relations studies" at Highland Dwellings and Sheridan Terrace, along with eight other projects that the NCHA deemed to be the most troubled.[435]

H.R. Crawford, then the Assistant HUD Secretary, had a few words to say about the disbursement. His primary concern was that "[w]e cannot correct the physical structures which were built[.] We can only work with these structures, improve them and provide the kind of management and service support that will not further add to the physical depreciation and deterioration of the buildings and frustrations of their inhabitants."[436] Although somewhat vague, Crawford seemed to understand there were

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[431] Kirk Scharfenberg, "Mayor Hails Progress in Southeast," *The Washington Post, Times Herald*, June 16th, 1972.
[432] Ibid.
[433] Ibid.
[434] Thomas W. Lippman, "$100 Million Public-Housing Plan Announced by HUD," *The Washington Post*, June 11th, 1974.
[435] Ibid.
[436] Ibid.

some deficiencies with the buildings as they were constructed. Thus, at its foundation, public housing might have been unfixable, but the problems could be alleviated through patchwork maintenance. What Banks failed to capture in his comments, however reasoned they might have sounded, was that a persistent problem in the history of public housing in eastern Washington, D.C. was the role of the varied topography and hydrology. While difficult terrains with changes in grade might be surmountable problems, many of the public housing complexes that were built used unsuitable materials and disregarded the potential role of rolling terrains and running water in damaging those materials. So, the problem of public housing could not be solved solely through patchwork fixes as, for example, was attempted at Lincoln Heights, but rather through a wholesale reconstruction of the sites in order to mitigate envirotechnical failures.

It is clear from the record that Sheridan Terrace was structurally unsound, given the prevailing hydrology, topography, and soil type of the area where it was built. It may also be that the constant stream of automobiles up and down Suitland Parkway added to the stresses on the interior walls and ceilings. They almost certainly threatened the health of the complex's residents. These problems were apparent to visitors and tenants alike, but could not be wholly fixed, because they were tied to the actual building site itself. Thus, the public went from seeing Sheridan Terrace as an example of modern public housing for low-income renters to a deteriorating and somewhat vacant complex in the span of just nine years, representing one of the most dramatic declines in housing stability in the history of the NCHA.[437]

Conclusion: Sheridan Terrace and the Legacy of Siting in Eastern Washington, D.C.

Sheridan Terrace was built in a creek bed. Stickfoot Creek had been buried and drained since the 1910s in order to make way for first a sewer line, then Suitland Parkway. At the time it was built, metropolitan planners considered the Parkway to be a vital conduit for defense-related vehicles going from Andrews Air Force Base to the Bolling Naval Air Station. The creek bed offered a cheap and easy space to acquire for

[437] Sheridan Terrace won the Metropolitan Washington Board of Trade award in 1962 but had a vacancy rate of 86% by 1971.

the purpose of building the road. By the 1950s, the roadway was an obvious benefit to commuters from eastern Washington, D.C. and the suburbs further afield. Those commuters brought with them noxious exhaust fumes carrying lead particles, which might not have been as devastating to the NCHA's tenants had they not been provided with a complex that was adjacent to the Parkway.

The NCHA, however, was constrained in its choice of sites. With a diminishing budget but a mandate to house the hundreds of families being evicted from urban renewal sites, the NCHA was in a double bind. Eyeing affordable land on which to build housing in the 1950s as population density in eastern Washington, the NCHA settled on a slice of property owned by the NPS. That site ran in a narrow strip adjacent to Suitland on one side, and a massive embankment on the other side. The entire slice of land also ran downhill on a slope from north to south. Eventually, the natural flow of water at that site, acting in conjunction with the soil quality and the rumble of cars on the Parkway might have contributed to noticeable plaster deterioration and decay within the Sheridan Terrace apartments.

In no way could a situation where plaster fell on the heads of young children be called decent, safe, or sanitary.[438] James Ring, only the second executive director of the NCHA, had worked with John Ihlder for decades, and was brought on early in the ADA's efforts. Ring spoke reverently about Ihlder, and worked to uphold his vision. Yet, the environmental factors at Sheridan Terrace conspired to undermine the decentness, safety, and cleanliness of the complex within less than a decade of its completion. This represented a significant environmental burden for the African American tenants of Sheridan Terrace. All the while they also contended with deteriorating surroundings and flooding. The NCHA's inability to adequately respond to those envirotechnical obstacles—which were consistent with the quality of the Sheridan Terrace site—is what fostered the emergence of that landscape of environmental racism.

Sheridan Terrace shows that the problems of poor siting persisted into the postwar period, but sometimes in a different form. The obstacles that siting posed were not unique to Barry Farms, Lincoln Heights, or Highland Dwellings. Just prior to the Second World War, the Lanham Act granted the NCHA funding on par with what was needed to

[438] Boo, "Stairway to Hell: Squalor and Squatters in D.C.'s Worst Project."

dramatically reshape the landscape of eastern Washington, D.C., and a mandate to finally build housing on a massive scale for the city's growing population. And of course, the NCHA sent out appraisers who documented ravines and changes in grade on the properties it considered. Even though contractors wrote about flooding delays, deteriorating materials, and structural damage at the time of construction, population pressures and the need to house wartime workers were of the utmost importance. The federal government was breathing down the necks of the NCHA's executive directors. But what was the excuse for NCHA planners in the 1950s? The war was over, previously scarce materials were more abundant, and there was simply more time to plan. Indeed, the NCHA exercised due diligence by following the DCDLI's instructions to send an outside observer. But when that observer reported back that the southern buildings exhibited evidence of slippage, the NCHA continued with the project anyway. Once again, institutional pressures and decreased funding provided the environment with more agency, and it exerted a great deal of pressure on the stability and healthfulness of the Sheridan Terrace complex.

Sheridan Terrace remains in the memory of many residents of the District of Columbia as an example of the failures of mid-century public housing. Yet, those residents tend to explain the failures as stemming from city administrators, or criminals, or the drug epidemic of the 1980s and 1990s, or mass incarceration, or a litany of other issues. But, to its very foundation, siting of Sheridan Terrace proved to be a significant obstacle to its success. Its deterioration was built into its foundations, and the decay that the residents suffered was exacerbated by the smoke, exhaust, and poisons emanating from the Parkway across the median.

Conclusion

Envirotechnical Obstacles, Environmental Injustice, and the Environmental Legacy of the National Capital Housing Authority's First Decades

On April 18th, 1993, Katherine Boo, a reporter for *The Washington Post* published an article about Sheridan Terrace. Titled "Stairway to Hell: Squalor and Squatters in D.C.'s Worst Project," the article was featured on the front page of the opinion section of the paper. On the left-hand side of the column the paper's illustrator anthropomorphized the Sheridan Terrace complex as a skeleton made from brick and iron. In the article, Boo described how residents suffered from broken plumbing, deteriorating plaster, and vermin that took advantage of the state of disrepair to scurry from unit to unit. She placed the blame for the state of things at Sheridan Terrace on the failed managerial culture, which did little to inspire a sense of connection or community between the live-in managers and the residents of public housing.[439]

Boo's assessment helps explain why the public housing stock of the District of Columbia continued to decline during the 1980s and 1990s. The problems she identified, however, were evident much earlier than that. The first years and decades of the National Capital Housing Authority's program were marred by structural instability, erosion on its grounds, flooding, fire, and pollution. The history of the NCHA in eastern Washington, D.C. was not so much a fall from grace as an inability to get a truly effective public housing program off the ground.

Public Housing and Changes in the Landscape

It helps to consider the NCHA's efforts as more than just an attempt by a local housing authority to erect housing. Rather, the NCHA built a new envirotechnical system in eastern Washington, D.C. In the early 1940s, the NCHA confronted a rugged, hilly, and tree-lined landscape. It would not be enough for the NCHA to simply put up housing; it had to build out the sewers, water pipes, roads, and wiring to support public housing complexes. John Ihlder wanted to provide modern housing with all of its associated amenities to the NCHA's tenants. His vision was not restricted to the domestic space

[439] Katherine Boo, "Stairway to Hell: Squalor and Squatters in D.C.'s Worst Project," *The Washington Post*, April 18th, 1993.

itself, but in fact to the surroundings in which homes stood. He carried his Progressive vision for proper housing in the proper surroundings into his work in eastern Washington, D.C. Since the communities that the NCHA built on lacked many connections to infrastructures that could provide modern amenities, the NCHA would have to furnish them itself.

Furthermore, the NCHA committed itself to large-scale housing construction throughout the 1940s and 1950s. During the Second World War, the FPHA mandated that the NCHA provide housing for defense industry workers, in addition to the work that the Authority had already been doing during to rehouse families evicted from alley dwellings. After the war, the RLA partnered with the NCHA; the housing authority would be responsible for building homes for the thousands of residents displaced by urban renewal. The pressures on the NCHA to build housing on a large-scale shaped the size of its complexes throughout the 1940s and 1950s.

The NCHA's desire to build modern projects on a scale that could accommodate the need for housing among Washington's low-income residents meant that it would have to dramatically transform the landscape of eastern Washington, D.C. Its efforts to grade the hilly terrain, remove trees, fill ravines and gullies, and terrace its plots were part of the development of a new envirotechnical system in the region. The NCHA tried to build an envirotechnical system that would secure the long-term health and welfare of low-income tenants in decent, safe, and sanitary housing. By altering the landscape the Authority hoped to achieve just that goal. But the history of the NCHA's efforts does not show that this was a straightforward process. Because an envirotechnical system is constituted by intertwined nature and artifice, the environment often influences the outcome of the technological development of a landscape. The system is neither wholly artificial nor natural, but is instead both. Environmental pressures can constrain the designs and achievements of a human-built landscape, just as technological or infrastructural developments change the appearance of a "natural" landscape. As the system develops, it remains dynamic. Environmental and human-built components of the system can work together in unexpected ways. When the NCHA heard about flooding, erosion, fires, and structural deterioration in and around its buildings, it encountered some of the unexpected obstacles that emerged within the envirotechnical system.

The public housing complexes were the property of the NCHA, which was responsible for construction, maintenance, and operations. The NCHA, then, served as the administrator of the envirotechnical system. It attempted to respond to any obstacles in the way of decent, safe, and sanitary housing that emerged during the lifetime of its buildings. The NCHA's ability to address obstacles was constrained, however, by political and economic circumstances. With the passage of the Lanham Act in 1940, the NCHA received millions of dollars in low-interest loans from the USHA expressly for housing construction. This would allow John Ihlder to test his ideas about planning and building public housing on a large scale. However, the NCHA did not have much time to prepare for the construction process. The promise of increased funding was tied to very tight time constraints; the NCHA would have to build quickly as defense workers flooded into the District of Columbia.

A clear pattern emerged during the Second World War, which would partially determine the fate of some of the earliest NCHA properties. In Barry Farms, Lincoln Heights, and Highland Dwellings, the NCHA ignored parts of the District of Columbia building code.[440] The building code required the District of Columbia's inspectors to visit the sites and ensure that there was appropriate drainage, that roads and surfaces were graded correctly, that the materials used were appropriate, and that the structural design of the buildings was suitable for inhabitants.[441] The NCHA was able to avoid the typical inspection process for buildings in the District of Columbia because the USHA argued that a project of national importance did not have to be overseen by a local authority.[442]

The USHA gave with one hand and took with the other; it provided the resources necessary for the NCHA to pursue Ihlder's vision for large urban neighborhoods that appeared similar in nature to middle-class communities. It also, however, constrained the NCHA in its ability to address envirotechnical concerns at the time that those communities were being built. The NCHA's contractors wrote to the Authority,

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[440] William R. Simpson to A.J. Haskell, NCHA Chief of Finance and Accounts, "Release of Payment to Jeffress-Dyer, Inc., on the Barry Farms Contract," June 13th, 1944; Reading File, 4/1/44-6/30/44, NCHA Legal Division, Archives of the District of Columbia, ADC; "FPHA Pleads National Policy in Building Without Permit," *The Washington Post*, July 7th, 1945; Connie Feeley, "Housing Project Lacks Fire Walls," *The Washington Post*, December 14th, 1957.

[441] National Capital Housing Authority, *Report of the National Capital Housing Authority for the Ten-Year Period 1934-1944* (Washington, D.C.: GPO, 1944), 67.

[442] "FPHA Pleads National Policy in Building Without Permit," *The Washington Post*, July 7th, 1945.

describing the complicated interactions between rainfall, soil, drainage, and the materials used during construction. Some managers requested the presence of outside experts to monitor the site and ensure it could properly hold the structures that the NCHA desired. But the USHA circumscribed the NCHA's ability to test and investigate its plots at the time of construction.

The construction process at the wartime projects gave rise to two major envirotechnical obstacles: those pertaining to siting, and those related to the materials that the NCHA used. The consequences of those envirotechnical obstacles are catalogued below. What was important about them was that the NCHA's ability to respond to those obstacles was conditioned by political and economic factors. Ultimately, the NCHA was able to do little to fully address those obstacles. This meant that the envirotechnical system became unstable, and ultimately did not fulfill the NCHA's goal of decent, safe, or sanitary housing. At moments when the administrative power of the NCHA was diminished, the environment impinged more strongly on the stability of the wartime public housing structures. The movement of soil and the flow of water continued to erode the foundations, walls, roofs, and grounds of public housing complexes. The NCHA, under pressure to build quickly and ignore inspection procedures that might have ensured the longer-term stability of its complexes, could do little to effectively respond to the envirotechnical obstacles at its sites. The envirotechnical system, therefore, did not operate as the NCHA intended.

In the postwar period, political and economic factors continued to undermine the NCHA's ability to effectively administer its public housing program, which left room for the emergence of significant envirotechnical obstacles. For one thing, the NCHA found that the government support that had been readily available during the Second World War dried up. This was part of a national trend. While extolling the virtue of low-income housing programs in the Housing Act of 1949, which endeavored to build 810,000 units of housing by 1955, in fact Congress kept the actual appropriations for public housing low.[443] For the NCHA, gone were the low-interest loans from the USHA. Instead, the Authority received an annual appropriation from Congress, which allocated a small

[443] Gail Radford, *Modern Housing for America: Policy Struggles in the New Deal Era* (Chicago: The University of Chicago Press, 1996), 200.

amount for the maintenance and operation of existing stock.[444] Expansions would have to be funded through bond issuances.

At the same time, however, the District of Columbia began to plan several large urban renewal projects. Under the District of Columbia Redevelopment Act of 1945, the NCPC became responsible for urban renewal planning. It enlisted the help of the RLA to carry out urban renewal activities—including the demolition of many existing homes—in twelve sections of the city between 1955 and 1972.[445] The NCHA was a partner in urban renewal as it began to build housing to accommodate the displaced residents. In the 1950s, then, the position of the NCHA was different than it had been during the war. The Authority was expected to build homes for thousands of displaced residents with a far more restricted budget. Once again, its ability to effectively administer the envirotechnical system of public housing was constrained by institutional politics.

Amidst the changing bureaucratic context the NCHA continued to pursue siting for public housing. By the late 1950s, however, eastern Washington, D.C. was no longer a low-density semi-agricultural community. In part through the NCHA's past efforts to expand sewerage, power, gas, water, and roads in the region—along with those of the NCPPC and the NPS—the region had urbanized rapidly. The NCHA no longer had a wealth of land to build on; it had to make due with what was available. In two cases—Kenilworth Courts and Sheridan Terrace—the NCHA selected sites that were adjacent to major nuisances. For Kenilworth Courts, the nearby Kenilworth dump spewed smoke, ash, and soot towards residents' apartments. In Sheridan Terrace, the noise and exhaust from the major roadway in front of their property endangered the health and welfare of residents. Furthermore, built in a former creek bed at the base of a large embankment, Sheridan Terrace experienced problems related to erosion and flooding, much as the wartime complexes had.

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[444] All of the budget figures are available from FRASER, a product of the St. Louis Federal Reserve Branch, which compiled historical US budget. See FRASER, *Budget of the United States Government*, https://fraser.stlouisfed.org/title/budget-united-states-government-54?browse (accessed May 14th, 2020).

[445] Anne Schuyler, "The End of an Era: Termination of Downtown and Shaw Urban Renewal Plans," National Capital Planning Commission website, https://www.ncpc.gov/news/item/102/ (accessed May 16th, 2020).

The political and economic situations that the NCHA faced in the 1940s and 1950s greatly shaped its ability to administer the envirotechnical system that it had built. Ultimately, the NCHA offered inadequate responses to the envirotechnical obstacles of siting and materials. This left more room for environmental forces to undermine the quality of life and structural integrity of public housing complexes in the eastern portion of the District of Columbia. As smoke spread across Kenilworth Courts and Highland Dwellings, and as the ground moved and flooded in Barry Farms, Lincoln Heights, and Sheridan Terrace, the NCHA's properties deteriorated and degraded.

Envirotechnical Obstacles: Distinguishing Between Siting and Materials

Barry Farms, Lincoln Heights, Kenilworth Courts, and Sheridan Terrace all exhibited some of the problems associated with siting. The term siting here refers to two things. First, the NCHA made significant changes to the sites that it chose in order to support public housing. Second, siting also refers to the location of public housing complexes, and their proximity to environmental nuisances, which is more relevant to the postwar complexes. Public housing changed the appearances and functions of the places where it was located; it was also shaped by the surrounding landscape.

Barry Farms and Lincoln Heights were two of the earliest projects that the NCHA built in eastern Washington, D.C. The Authority encountered a rolling and moderately forested landscape, with plenty of gullies and ravines. In order to build housing on the scale it intended, the NCHA would have to first level the terrains and take out many of the trees. In both cases, the modified landscape was terraced to the best of the contractors' ability.

The builders encountered several problems while landscaping the sites. At Barry Farms, for example, heavy rains eroded a cut in the slope towards the higher point of the complex. The cuts had been made in order to accommodate new housing. In October the slope began to collapse, which damaged property belonging to St. Elizabeth's hospital. This set back work at the site as contractors hastily built a new drainage system in order to mitigate flooding.[446] Similarly, at Lincoln Heights, heavy rains in July delayed

[446] National Capital Housing Authority, 58.

foundation construction.[447] All of the District of Columbia is prone to severe thunderstorms during the summer and fall.

As noted above, the NCHA did not allow the District of Columbia to perform the required building inspection while the wartime projects were being built. So at Lincoln Heights, the site manager encouraged the NCHA to bring in outside experts, even if they were not officially working for the District of Columbia. The manager was concerned about the ability of the soil to handle the buildings' load, soil shrinkage as a consequence of changing water levels, and the placement of buildings towards the peak of the grade at the site.[448] He explicitly compared the landscape of Lincoln Heights to that of Barry Farms in his letter to the higher officials in the NCHA.[449]

After work was completed, both Barry Farms and Lincoln Heights faced envirotechnical obstacles pertaining to their siting. In October of 1976, for example, the manager for the Barry Farms complex revealed that the position of the complex on a sloping hill meant that water would flood towards the site's lower points. When that happened, it penetrated the gas lines, which cut off fuel for heating and cooking at the complex.[450] Furthermore, according to another manager of the complex, ""there's a lot of flooding; water bangs up against the buildings and the structures begin to sink and rot[.]"[451] Since the 1960s residents had voiced concerns about plaster deteriorating and floors warping within their units. Backed-up plumbing and poor quality sinks also contributed to the mess at Barry Farms.[452]

At Lincoln Heights the relationship between flowing water and soil movement was more apparent to residents and visitors. A Public Housing Authority inspector who toured the site in 1952 and 1953 encountered badly eroded slopes that were desperately in

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[447] P.W. Clogston, Construction Superintendent to Mr. Bernard E. Loshbough, Deputy in Charge of Operations, "Report on Progress and Status of Lincoln Heights," November 30th, 1945; Lincoln Heights Dwellings 1943-1945, Box 1, Entry P 23: Records Regarding Public Housing Dwellings, 1943-1959, RG 302, NARA.
[448] Homer J. Smith to P.W. Clogston, "Lincoln Heights Dwellings," April 3rd, 1945; Lincoln Heights Dwellings 1943-1945, Box 1, Entry P 23: Records Regarding Public Housing Dwellings, 1943-1959, RG 302, NARA.
[449] Ibid.
[450] Richard E. Price and Juan Williams, "Water Gets in Line, Barry Farms Loses all Gas for Heating," *The Washington Post*, October 14th, 1976.
[451] Edward D. Sargent, "Running Barry Farms," *The Washington Post*, June 25th, 1981.
[452] United States Senate, Subcommittee on Business and Commerce, *Housing in the District of Columbia*, 89th Congress, 2nd Session, June 28th-29th; July 19th-21st, August 3rd-4th, 1966, 283.

need of new retaining walls and a proper drainage system. Heavy rains had ruined large portions of the greenspace that the NCHA had created in 1944 and 1945.[453] Of course, some of the retaining walls had cracked anyway in response to the movement of soil and water underneath the site.[454] Residents of Lincoln Heights would continue to contend with broken sidewalks, cracked walls, flooding and erosion through the 1960s and 1970s.

In the postwar period, siting remained a concern. Although Sheridan Terrace exhibited some of the same problems as the wartime projects due to its position at the bottom of a ravine that had been carved long ago by Stickfoot creek, the postwar complexes grappled far more with the problem of proximity to environmental nuisances. The NCHA and other city agencies had been successful in spurring development in eastern Washington, D.C. This meant, however, that when it came time for the NCHA to begin housing the residents displaced by urban renewal, there was scant open space left. Kenilworth Courts was sited nearly adjacent to an open burn landfill, which sent soot and ash towards the complex. A retrospective study by the Agency for Toxic Substances and Disease Registry revealed that indeed residents of Kenilworth Courts were likely exposed to dangerous substances.[455] Sheridan Terrace dealt with a similar problem. Its proximity to Suitland Parkway meant that residents had to contend with automobile exhaust and the pernicious poison of the mid-twentieth century, lead. The envirotechnical obstacle of siting refers to two slightly different things in the wartime and postwar eras. Still, the NCHA's choice of sites and the modifications thereto spurred environmental problems that the Authority was not fully equipped to rectify.

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[453] Letter from John P. Prescott, Assistant Director for Management—Disposition, Public Housing Administration to National Capital Housing Authority, April 4th, 1952; Lincoln Heights Dwellings 1943-1945, Box 1, Entry P 23: Records Regarding Public Housing Dwellings, 1943-1959, RG 302, NARA; Letter from John P. Prescott, Assistant Director for Management—Disposition, Public Housing Administration to National Capital Housing Authority, June 15th, 1953; Lincoln Heights Dwellings 1943-1945, Box 1, Entry P 23: Records Regarding Public Housing Dwellings, 1943-1959, RG 302, NARA.

[454] Letter from John P. Prescott, Assistant Director for Management—Disposition, Public Housing Administration to National Capital Housing Authority, April 4th, 1952.

[455] U.S. Department of Health and Human Services, Public Health Service, Agency for Toxic Substances and Disease Registry, "Health Consultation: Kenilworth Park Landfill—Southside NE Washington, D.C.," https://www.nps.gov/nace/learn/management/upload/2006-ATSDR-Health-Consultation.pdf (accessed November 27th, 2019).

A photograph of trash being burned at the Kenilworth dump, c. 1960. Note the close proximity of homes in the background. Oliver F. Atkins Photograph Collection, George Mason University, "Massive Fire at the Kenilworth Dump," February, 1952; http://images.gmu.edu/luna/servlet/workspace/handleMediaPlayer?lunaMediaId=GMUDPSdps~15~15~11660~100333 (accessed March 12th, 2020).

The envirotechnical obstacle of materials refers to the degree to which the manufactured parts of the envirotechnical system acted as the builders intended with the environment. In an ideal situation, the materials that the NCHA used would withstand environmental pressures and secure the long-term structural integrity of the complex. Unfortunately for the NCHA, during the Second World War critical materials were in short supply, and the NCHA ended up building Lincoln Heights and Highland Dwellings with materials that were not suited for their environments.[456] In Lincoln Heights, the envirotechnical obstacles of materials manifested primarily as leaking roofs and walls.

[456] Barry Farms was built with similar materials but the textual evidence for their failure is less comprehensive than that for Lincoln Heights or Highland Dwellings.

Since timber was in short supply, Lincoln Heights was built with gypsum boards coated in bitumen. Heavy rains in July of 1945 had damaged some of the roofs, and the contractors were concerned about falling through.[457] In a 1952 site visit, the same PHA inspector noticed that the flashings on the roofs of some of the buildings at Lincoln Heights had corroded; he recommended coating the roofs with additional bitumen.[458]

Highland Dwellings experienced much more severe and violent consequences from the environmental obstacles posed by poor materials. Built with only an asbestos sheet between the dwellings and with wooden gutters (rather than sheet metal), Highland Dwellings suffered from a series of fires between 1942 and 1964. While not every year bore witness to a fire, Highland Dwellings contended with far more fires—and deaths—than any of the other wartime or postwar projects. The NCHA did not use the fires as a chance to petition for more funding for repairs, and it only began to attempt to retrofit the complex in 1961, after years of deliberation.[459] By that point, the complex had gone from being all white to over two-thirds black, as integration prompted white families to move further into their racial enclaves.

Due to a changing mandate, pressures from other bureaucracies, and a decline in funding after the end of World War Two, the NCHA was unable to sufficiently address the envirotechnical obstacles in and around its public housing complexes. While the NCHA had built a new envirotechnical regime over the old agricultural communities of eastern Washington, D.C., ultimately environmental forces—the soil, water, air, and terrain—worked against the NCHA's plans for decent, safe, and sanitary housing. Those environmental forces, in turn contributed to several environmental burdens on the NCHA's tenants. Out of the difficult envirotechnical obstacles of the NCHA's program came the problem of environmental racism.

Environmental Racism in the NCHA's Properties

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[457] P.W. Clogston to John Ihlder, "Roof Sheathing at Lincoln Heights," July 30th, 1945; Lincoln Heights Dwellings 1943-1945, Box 1, Entry P 23: Records Regarding Public Housing Dwellings, 1943-1959, RG 302, NARA.

[458] Letter from John P. Prescott, Assistant Director for Management—Disposition, Public Housing Administration to National Capital Housing Authority, April 4th, 1952.

[459] "Highland Dwellings to be Fireproofed after 4 Fatal Fires," *The Washington Post, Times Herald*, October 22nd, 1961.

Environmental racism refers to the disproportionate number of environmental nuisances located in communities of color. The NCHA properties were clearly full of such burdens, and lacking in many amenities such as parkland, clean water, and clean air. The NCHA's public housing program exacerbated the environmental burden on black communities, even though it was established to provide decent, safe, and sanitary housing.

Most obviously, the NCHA furnished homes that were susceptible to decay and deterioration. Furthermore, it concentrated hundreds of black families into homes that either declined in quality precipitously during the first decades that they were in operation or complexes located near environmental burdens. The NCHA's inability to fully confront the envirotechnical obstacles of its complexes meant that dwelling units experienced falling plaster, warping floors, and holes in the walls. In addition to contending with the dangers posed by collapsing materials, the structural deterioration provided plenty of room for rats to scurry throughout the complexes. Residents at both Barry Farms and Lincoln Heights expressed concerns about rats slinking through their homes in the 1960s. According to the tenants, they took advantage of the numerous holes throughout the buildings to move from room to room.[460] At Highland Dwellings, however, there was little in the record that revealed that residents suffered from vermin running freely. The problem seems to have been limited to the two African American complexes built during the Second World War. Of course, the residents of Highland Dwellings contended with other problems stemming from the envirotechnical obstacles of the materials the NCHA used. Furthermore, as the complex became predominantly African American after 1953, the NCHA continued to drag it feet on providing the appropriate fireproofing, and the flames continued to burn at the Highland Dwellings.

But there is also a spatial dimension to the pattern of environmental racism within the NCHA's projects. For one thing, the housing complexes that were intended for black residents were often built in black neighborhoods. This was an outcome of the fact that black land was devalued relative to white land. When the NCHA built an envirotechnical regime on the site of the former agricultural communities worked by African American

[460] United States Senate, Subcommittee on Business and Commerce, *Housing in the District of Columbia*, 89th Congress, 2nd Session, June 28th-29th; July 19th-21st, August 3rd-4th, 1966, 280.

families, it was also building on the cheaper, hillier, and more sensitive land that whites disregarded. African American families had built farms that conformed to that landscape. The NCHA modified the landscape in pursuit of an envirotechnical system that could support public housing. However, because it was unable to adequately confront the envirotechnical obstacles of the sites, the NCHA ended up concentrating hundreds of families in black enclaves that degraded and deteriorated over time. Thus the envirotechnical obstacles that the NCHA encountered contributed to the problem of environmental racism in Washington, D.C.

By the late 1950s, as open space was increasingly difficult to find in eastern Washington, the NCHA decided to build on sites that were in close proximity to significant environmental nuisances. Kenilworth Courts was built close to a sizable landfill, while Sheridan Terrace operated adjacent to a major roadway (which itself had contributed to the development of eastern Washington, D.C.). During the wartime period, then, the NCHA maintained the traditional patters of environmental injustice that had relegated African Americans to poorer quality land on environmentally sensitive sites. It moved hundreds of families to locations and homes that deteriorated because the Authority could not adequately address the envirotechnical obstacles of the sites. In the 1950s, the NCHA amplified the environmental injustices for its tenants by furnishing new projects near obvious environmental nuisances. The spatial dimensions of the NCHA's public housing program represented both a continuation and intensification of the environmental injustices that impoverished black families suffered in the District of Columbia.

Furthermore, public housing was a significant force in the segregation of metropolitan space by race. The NCHA's role in that history is much like that of other public housing authorities. By expanding the stock of public housing in urban spaces, the NCHA participated in the shoring up of racial boundaries. In Washington, D.C., African Americans were mostly provided with homes in the Southeast quadrant or in section of Northeast on the opposite side of the Anacostia River from downtown. Throughout the 1960s, many whites moved out of public housing and their old neighborhoods and into the burgeoning suburbs across the District of Columbia border. African Americans, who were locked out of the generous federal housing programs that emerged after the Second

World War, were stuck living in deteriorating public housing complexes or found homes in the subpar private housing market. Neither situation was ideal. But the NCHA's inability to provide decent, safe, or sanitary housing was especially disappointing. Limited to certain parts of the city with high concentrations of public housing, African American families found little support from the agency that was specifically built to remedy their situation.[461]

Throughout the 1940s and 1950s, the NCHA simultaneously repeated traditional patterns of environmental segregation in eastern Washington, D.C. and amplified them by concentrating hundreds of families on or near environmentally sensitive sites. The Authority repeated traditional patterns by building in places that had long been given over to African Americans because whites considered them less valuable. It amplified those patterns by concentrating hundreds of families in those same environmentally sensitive sites. It also brought hundreds of families into new building locations, which were closer to some of the sanitary, and transportation infrastructures that generated environmental injustices throughout the metropolitan region.[462] This narrative shows that the racialization of space in the postwar metropolis by public housing construction had environmental consequences as well. The NCHA's actions maintained forms of environmental injustice—which provided marginal lands for black families—while trying to provide decent, safe, and sanitary housing. The Authority also built new complexes near the noxious features of a part of the city that rapidly became a black enclave in the 1950s and 1960s.[463]

Who would be an advocate for the tenants of the NCHA as they faced these envirotechnical obstacles? The tenants looked to each other to build resilient

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[461] The ways that the NCHA was both constrained by previous forms of environmental injustice and helped to shore up a racialization of metropolitan space that also amplified the

[462] Suitland Parkway connected white suburban enclaves to downtown Washington, D.C. Kenilworth dump made prosperous sections of the city cleaner while degrading the local environment for nearby African Americans.

[463] My perspective borrows from that of Laura Pulido. Pulido argues that environmental injustice in a metropolitan context is more pernicious than simply choosing to put polluting industries near black homes. Since the market for housing, for example, is constituted by and reproduces racism, black land can only be valued in relation to white land. It is cheaper for a landfill to be built in a black community than a white community, because market forces uphold the relative value of white communities. See Laura Pulido, "Rethinking Environmental Racism: White Privilege and Urban Development in Southern California," *Annals of the Association of American Geographers* 90, no. 1 (March, 2000): 12-40.

communities. Kimi Gray, for example, organized a tenant management program that stemmed some of the deterioration at Kenilworth Courts. With the support of her neighbors she pushed back against repair plans that ignored the problems that tenants had long faced. Like the individuals that Rhonda Williams profiled in *The Politics of Public Housing*, Gray received a political education as she assessed the quality of her apartment and realized that together, her community could remediate, in part, their local environment.[464] Similarly, the Band of Angels at Barry Farms pressured Walter Washington to provide funds for upkeep and maintenance within their dwellings. The deterioration of public housing, and the environmental pressures the residents experienced, helped provide a way to organize and protest. In that way the environment was an agent of political change.

The tenants of the NCHA, however, faced a difficult situation. The paradox of life in Washington, D.C. was that although the federal government was very close at hand, residents did not have representation at that level. Nor, until 1973, did Washingtonians have a local government. Although it is true that in most cases local governments were willing to disregard the concerns of public housing tenants in order to avoid the ire of conservative white voters and real estate interests, the tenants of the NCHA had very little recourse to place political pressure on the NCHA. They did, however, eke out some victories. Kimi Gray built a successful tenant management organization. The Barry Farms Band of Angels was able to directly pressure the leadership of the NCHA to provide crucial repairs.[465] Those victories coincided with a major change in the leadership of the NCHA. After James Ring retired in 1960, the NCHA was no longer controlled by the first generation of planners. Ihlder and Ring had built their careers during the Progressive and New Deal periods, when aloof, paternalistic urban planning was commonplace. Walter Washington, who took the housing authority's helm in 1960, proved that he was willing to visit the NCHA's properties and meet with tenants. Thus by the 1960s public housing residents had learned how to press their claims directly to the Authority. Washington, however, was constrained by a dwindling budget. He would not

[464] Rhonda Y. Williams, *The Politics of Public Housing: Women's Struggles Against Inequality* (New York: Oxford University Press, 2004).
[465] Chris Myers Asch and George Derek Musgrove, *Chocolate City: A History of Race and Democracy in the Nation's Capital* (Chapel Hill: The University of North Carolina Press, 2017), 348.

be able to marshal the resources to successfully overcome the envirotechnical obstacles of the NCHA's siting and the materials used in the wartime projects.

The federal government—which tenants could directly appeal to when asked to testify—only intervened in its management practices, and even then did so rarely. Furthermore, federal legislators were not responsible to the tenants of Washington, D.C. as constituents. The NCHA avoided the constraints of direct political oversight from the municipal government for about forty years, from 1934 until 1973. This meant that the NCHA's leadership was far more insulated from political concerns than many of its counterparts in other cities. Congress was not often willing to exercise direct oversight over the NCHA, nor did it do so for the other planning agencies to s significant extent. Rather, planning, renewal, and housing construction proceeded from a confederation of the NCPPC, RLA, and NCHA. Most of the NCHA's constraints came from institutional demands, such as when the FPHA and RLA encouraged new construction projects. When Congress decided to reduce appropriations, as it did beginning in 1945, the NCHA was limited in the number of projects it could take on as well as its ability to repair older complexes. Because the NCHA was ostensibly overseen by the federal government, however, both the NCHA and its tenants were in unique positions, relative to other housing authorities.

Envirotechnical History in the Metropolitan Setting

The history of public housing fits within an envirotechnical framework. Although the natural features of the landscape of public housing might have been less readily apparent than in the case of a major hydraulic system or a carefully managed forest, there were clearly environmental forces at work throughout the history of public housing. Those environmental forces intertwined with the manufactured components of public housing in ways that were not completely anticipated by the managers and planners in the NCHA. Ultimately, environmental forces exercised a great deal of agency within and around public housing in eastern Washington, D.C. throughout the last sixty years of the twentieth century.

Human and natural forces interact in complex ways in envirotechnical systems. Physically, human technologies in such systems blend with nature. But the politics of an

envirotechnical system can also shape how the hybridized space functions.[466] This was clearly the case for the NCHA. Although it did not have to contend with a strong municipal or state government, like most other housing authorities, the NCHA's work was instead largely constrained by the priorities of the federal government and metropolitan agencies. During the war the federal government pressured the NCHA to build housing quickly and shielded it from the Board of Commissioners. In the late 1950s, as urban renewal proceeded apace, the NCHA was brought in as a partner to the process and asked to produce housing for the displaced residents. Furthermore, Congress began to scale back appropriations soon after the war was over.[467] These factors meant that the NCHA was unable to respond to envirotechnical obstacles on its sites, which meant that the "natural" forces of soil and water flows, as well as air currents, contributed significantly to the decline of its properties.

The envirotechnical framework is an appropriate method by which to study and analyze the changing landscape of cities in the United States. As with many envirotechnical histories, the regime that the NCHA tried to build was constrained and shaped by the interests and needs of other agencies.[468] Although the NCHA had direct

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[466] In *Confluence*, Sara Pritchard writes that "the Rhône's 'natural' attributes not only exposed but also heightened conflicts among different institutions' envirotechnical systems." By this she means that the natural features of the Rhône—the flow of water at different times, siltation behind its dams, etc.—sometimes influenced the outcome of power struggles between different groups that hoped to exercise power within the envirotechnical regime. Diminishing wildlife or the demand for power, for example, might give environmentalists or nuclear power advocates a way to influence the direction of the envirotechnical regime. See Sara B. Pritchard, *Confluence: The Nature of Technology and the Remaking of the Rhône* (Cambridge: Harvard University Press, 2011), 79.

[467] National Capital Housing Authority, *Annual Report for the Fiscal Year Ended on June 30th, 1962* (Washington: G.P.O., 1962), 24. The NCHA relied on bond issuances for new developments. By 1962, as a result of bond issuances, the NCHA had a total indebtedness of $67,555,000, equivalent to about $573,500,000.

[468] Other envirotechnical histories center the story about how different groups struggle to control and direct the envirotechnical regime. For example, in *Crimes Against Nature: Squatters, Poachers, Thieves, and the Hidden History of American Conservation*, Karl Jacoby describes how locals, forest rangers, and wealthy robber barons struggled to orient the forest landscape towards their own ends which were the preservation of local customs, conservation, and recreation, respectively. Pritchard describes the postwar conflicts between the French nuclear power program, the fishing bureau, and local groups in their vision for how best to utilize the Rhône in *Confluence*. In *The Organic Machine*, Richard White describes how the interests of the Columbia Basin Interagency Committee, which coordinated the development of electrical power in the Columbia River, came into conflict with those of the local indigenous groups—represented by the Bureau of Indian Affairs—which sought to maintain traditional fishing grounds. Pritchard, 78-131; Karl Jacoby, *Crimes Against Nature: Squatters, Poachers, Thieves, and the Hidden History of American Conservation* (Berkeley and Los

control over its properties, and benefited from the absence of a true local government, it still contended with the politics of urban development in the postwar period. Even though the NCHA had a clear mandate to build decent, safe, and sanitary housing, its outcomes were shaped as it conflicted with other agencies about the development and appearance of the metropolitan landscape. The USHA instructed the Authority to ignore the District of Columbia building code during the Second World War. The RLA and the NCPPC shaped the limits of what the NCHA could achieve by charging it with new construction in the postwar period. The Department of Sanitation held sway over the landfill close to Kenilworth Courts. Much as in the case of any other envirotechnical system, different agencies and powers held different ideas about how the urban landscape should function and what it should be used to accomplish. They all played a part in the development of the NCHA's envirotechnical regime. Ultimately, the NCHA was a relatively weak administrator over its envirotechnical regime because it could not push back against the forces that shaped its construction program. Nor could it resist the steady forces of environmental change at its sites.

The envirotechnical approach opens the door for further investigation of metropolitan change in the postwar period. It accounts for the human and institutional limits to bringing about changes in the metropolitan landscape, while not losing sight of the environmental forces that those institutions had to contend with. The NCHA found itself in a precarious position, wedged between bureaucracies that insisted that it build without proper examination of the landscape during the war or without adequate funding after, and an ever shifting and changing local landscape in and around its complexes.

Metropolitan Environmental History and the History of Public Housing

The postwar American metropolis underwent extensive and dramatic environmental changes over a relatively short period of time. For the most part, scholars interested in the suburbs or road construction have written that history.[469] The

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Angeles: The University of California Press, 2014), 11-48; Richard White, *The Organic Machine: The Remaking of the Columbia River* (New York: Hill and Wang, 1995), 100-101.

[469] See, for example, Adam Rome, *The Bulldozer in the Countryside: Suburban Sprawl and the Rise of American Environmentalism* (Cambridge: Cambridge University Press, 2001); Christopher C. Sellers, *Crabgrass Crucible: Suburban Nature and the Rise of Environmentalism in Twentieth-Century America*

environmental history of public housing adds to that literature by centering the changes that slum clearance and urban renewal brought to the metropolitan landscape. The environmental history of public housing reveals that fire, pollution, infrastructure development, and changing landscapes were important features of postwar environmental history in cities.

The history of urban renewal has largely been left to historians of planning and design. While they have done an exceptional job exploring the political, social, and economic limits of mid-century city planning, far less ink has been spilled about the environmental consequences of that process.[470] It is high time for metropolitan environmental historians to take on that significant postwar project. As demonstrated in the case of the ADA and the NCHA, local authorities did much to change both the appearance of cities as well as their infrastructural networks, hydrologies, and topographies. Urban renewal and alley rehabilitation displaced thousands of people from longstanding city neighborhoods. In Washington, many of those families migrated east of the rivers, which saw an increase of 130,000 people between 1940 and 1960.[471] The NCHA needed to act quickly to house many of those displaced residents. The Authority's successes and failures shaped the experiences and lives of thousands of individuals. It also created new racialized spaces throughout the metropolitan region, which included various types of environmental burdens and amenities. In this analysis I have only been able to briefly comment on the many environmental components of urban renewal, but the subject offers several avenues for exploration. A focus on the history of the physical landscape during urban renewal provides for a deeper understanding of the environmental

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(Chapel Hill: University of North Carolina Press, 2012); Christopher Wells, *Car Country: An Environmental History* (Seattle: University of Washington Press, 2014). One significant exception is Andrew Hurley's history of the environmental movement in and around Gary, Indiana during the postwar period. He expertly navigates the competition between the black working class, the white working class, white suburbanites, and industrial concerns contested the terrain of environmental politics from 1945-1980. See Andrew Hurley, *Environmental Inequalities: Class, Race, and Industrial Pollution in Gary, Indiana, 1945-1980* (Chapel Hill: The University of North Carolina Press, 1995).

[470] See, for example: Samuel Zipp, *Manhattan Projects: The Rise and Fall of Urban Renewal in Cold War New York* (Oxford: Oxford University Press, 2010); Alison Isenberg, *Designing San Francisco: Art, Land, and Urban Renewal in the City by the Bay* (Princeton: Princeton University Press, 2017); Thomas H. O'Connor, *Building a New Boston: Politics and Urban Renewal, 1950-1970* (Boston: Northeastern University Press, 1993).

[471] Data from District of Columbia, Open Data DC, "Census Tracts," https://opendata.dc.gov/search?q=census%20tracts (accessed May 15th, 2020).

legacy of renewal programs, their effectiveness, the natural constraints to agencies' goals, and the consequences of the programs for different local communities.

Public housing history also benefits from closer attention to the question of siting. Most historians of the subject acknowledge that siting mattered. As D. Bradford Hunt succinctly put it in *Blueprint for Disaster*, "[l]ocated largely in black ghettos, public housing perpetuated racial segregation and symbolized second-class citizenship."[472] The siting of public housing, however, has wider implications than the segregation of space and residents' lack of access to schools, churches, and other social amenities.

The choices that the NCHA made about where to build housing shaped the larger outcomes of its public housing program. The Authority pursued decent, safe, and sanitary housing, but the operation of the envirotechnical system at its complexes reversed the NCHA's intended outcome. The environment played a key role in the history of public housing. It undermined the foundations, walls, and roofs of the wartime complexes. Smoke, soot, and ash from dumps and roadways harmed the health of the Authority's tenants. Even after the war, when the NCHA allowed for outside experts to investigate its property, the environmental features of the Authority's sites undermined the stability of its buildings and the quality of life for its tenants. The envirotechnical system itself created obstacles that the NCHA was hard-pressed to overcome. I assert that in addition to political conflicts, economic constraints, and bureaucratic infighting, the landscape itself—and the environmental features it contained—played an extremely significant role in shaping the history of decline in the NCHA's housing stock. The NCHA could not achieve the stipulation of the 1937 US Housing Act that called for decent, safe, and sanitary housing. The environment was too strong a force with which to contend.

This dissertation builds on some of the work that public housing historians have done on siting. There is general agreement within the field that public housing played an important role in segregating metropolitan space in the twentieth century, along with restrictive housing covenants, redlining, and federal housing programs that incentivized white homeownership. Although public housing historians disagree on the primary forces

[472] D. Bradford Hunt, *Blueprint for Disaster: The Unraveling of Chicago Public Housing* (Chicago: The University of Chicago Press, 2009), 6.

behind this segregation, it is clear that whites and blacks were separated into enclaves throughout the metropolitan region in the postwar period.

As mentioned above, the segregation of metropolitan space had significant consequences for African American families. In Washington, D.C., as many whites moved into new communities around the city and in the suburbs, and urban renewal continued apace, hundreds of African American families were relegated to the very public housing complexes that had spurred, in part, white flight. While white families enjoyed the benefits of cleaner air and water, black families in public housing contended with a deteriorating dwelling space, eroding greenery, and polluted air. Suburban commuters contributed to the plight of residents of Sheridan Terrace as they drove along Suitland Parkway to work. The District of Columbia balanced the cleanliness of prosperous neighborhoods against the deterioration of Kenilworth Courts. Black families lost access to their homes in urban renewal areas and on the farms in eastern Washington, D.C. as the NCHA worked to integrate the region into the city's infrastructural networks. Yet they could not flee to the cleaner neighborhoods available to whites. They would remain in the new racial enclaves built in part by the NCHA. Those racial enclaves both maintained older patterns of environmental injustice and amplified them.

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This dissertation is, at its core, an examination of one important reason why the National Capital Housing Authority was unable to construct decent, safe, or sanitary housing. The envirotechnical obstacles that it encountered—the sites and the material components of public housing—were too significant, and the NCHA too financially and politically constrained by other agencies and the federal government, to sufficiently overcome those obstacles. During rainy months in Washington, D.C., water flowed down the hillsides of eastern Washington, D.C., seeking its lowest point. All the while it took with it some of the topsoil, which expanded and contracted in wet and dry seasons. Sometimes, the water gathered in low points of the complexes, or behind buildings, where it damaged vital infrastructure or rendered foundations, floors, and retaining walls unstable. Sometimes, the water flowed through holes in the roofs or basements of the

buildings, threatening their stability from inside. All the while, the NCHA was unable to marshal the funds to stymie those environmental forces.

Sometimes, it was not water but air that undermined the NCHA's complexes. At Highland Dwellings, the proximity of the dwellings to each other, combined with the use of materials that were insufficiently fireproof, aided the spread of flames, causing damage, death, and grief among residents. At Kenilworth Courts and Sheridan Terrace, smoke and exhaust threatened to create local public heath crises, whether or not the NCHA had known at the time the full consequences of the proximity of its complexes to sources of pollution.

These factors contributed to an environmental justice crisis in several of the NCHA's properties. The number of burdens that public housing residents endured as a result of the Authority's inability to adequately address the envirotechnical obstacles at its complexes showed how unable the NCHA had been to achieve its goal of decent, safe, and sanitary housing. In the end, the environment itself was a significant force that shaped the development and operation of the public housing program in Washington, D.C.

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