REDLINING HISTORY: THE GEOGRAPHIES OF HISTORIC PRESERVATION

Katlyn M. Foster

Submitted in partial fulfillment of the requirements for the degree Master of Science in Historic Preservation

Graduate School of Architecture, Planning and Preservation

Columbia University
April 2021

The (social) inculcation of injustice into our geographies (and histories) arises in a most basic way from the inequalities that are produced from the uneven geographical effects of every individual action and all social processes.

Edward Soja

Acknowledgements

"Alone, we can do so little; together we can do so much." -- Helen Keller

I am so grateful to the many people who have assisted me with this thesis and supported me during this endeavor.

I want to thank my advisor, Professor Erica Avrami, for her expertise and guidance throughout my thesis research. The topic of my research was inspired by work in her course early in my time at GSAPP and her support was critical to its completion.

I also want to thank my readers, Professor Carol Clark and Jennifer Most, for sharing their time, their expertise, and their insights throughout this process.

My cohort provided immeasurable support and encouragement as we weathered the twin challenges of thesis research and living through the coronavirus pandemic together. Although our time at GSAPP may have been very different from what we anticipated, I am grateful to have shared this time with them.

To Bryan, I am forever grateful for the unwavering support you've offered all of my endeavors over the last 14 years. I could not have accomplished this without you and our constant companions, Milo and Ben. Finally, thank you to my family and my friends for their continued support and encouragement.

TABLE OF CONTENTS

Chapter 1: Introduction

The first codified historic district in the United States was the Old and Historic District in Charleston, South Carolina, established by zoning ordinance in 1931. Like many early preservation efforts in America, the project began with a group of local women determined to save an important piece of local architecture, the Joseph Manigault House, through which they hoped to preserve what they viewed as public memory and to share the cultural and aesthetic values of old Charleston (Yuhl 2020). The goals of Charleston's early preservation movement echo throughout foundational preservation practice and policies in America and reflect the belief in preservation as a social and moral good, safeguarding history and culture through the protection of the built environment for the betterment of current society and future generations. For decades, historians, practitioners, and preservation agencies and organizations in this country have treated the idea of preservation as an inherent or *a priori* good, with little need to empirically support the assumed benefits and values of preservation practices.

In recent years, this belief in the inherent value of preservation has come under greater scrutiny, both internally and externally. Communities have raised questions about the values that drive preservation and the field's ability to address concerns about equity and social inclusion: Which histories are valorized and which are overlooked? What historic and cultural narratives are protected by designation? How do the tools and standards currently used by the field constitute its ability to preserve diverse histories? A small group of academics and practitioners have begun to attempt to answer these questions with empirical research, and preservation organizations have likewise begun to contribute to that work and to acknowledge the historic depths of the issue. In its 2020 report on preserving African American heritage, the National Trust for Historic Preservation "acknowledge[d] that structural inequities and racism are imbedded in *what* we identify as worthy of preservation and protection and *how* we work, from historic sites to preservation commissions to the National Register of Historic Places"

(National Trust 2020), recognizing that issues of equity extend to the very origins of preservation in America. While this work is being undertaken by practitioners and organizations, pressure from the public continues to grow. While this thesis was being written, a community group in Seattle began a campaign pressuring city officials to study municipal historic preservation policy and practices over concerns that they have been used to obstruct affordable housing efforts and exclude new residents (Share the Cities 2021). Local media has described historic districts in Seattle as a new type of restrictive covenant because of the racial and socioeconomic homogeneity typically found within them (Eliason 2021). The ability of leaders, institutions, and practitioners in the preservation field to answer these questions of equity, and to center the concerns of communities impacted by preservation, will have a critical impact on the future of the field.

Adding to the body of empirical research and the burgeoning branch of quantitative research on the practice of preservation, this thesis develops a geospatial methodology with which to query whether preservation designations and the effects of those designations are distributed equitably among people and spaces in American cities. Current research on the socioeconomic impacts of preservation is typically not spatialized; the city and historic districts within it are treated as homogenous. This approach disregards the longitudinal histories of urban interventions and the ways in which those histories have created geographies of privilege and disprivilege within cities, as well as how preservation, a part of those urban histories, may have been influenced by or contributed to exclusionary systems over time. Georeferenced maps of historic redlining (discriminatory lending practices based on the racial demographics of institutionally delineated neighborhoods from the early 20th century through the 1980s, and the progenitor of other discriminatory 20th century urban planning policies) are utilized in the geospatial analysis as an organizing framework to contextualize preservation designations within spatial patterns of historic privilege and disprivilege.

An initial analysis of six cities compares the proportionality of redlined land area in each city overall to the percentage of designated land area which falls within those redlining boundaries to understand whether historic district designations follow the same spatial patterns as redlining in each city and how those spatial relationships may have changed over time. An expanded analysis in two cities spatializes and examines social and economic metrics – including population density, racial demographics, employment, poverty, and housing values – in historic districts in relationship to their encompassing geographies of privilege or disprivilege as represented by redlining. The sociospatial analysis spans from the period of institutionalized redlining, in 1940, to the latest census data in 2010, including major periods of designation in both cities. Analyzing shifts in those metrics over time speaks to the distributive effects of preservation, what historic social groups are represented within designation boundaries and what current social groups are benefitting from district designation. This analysis also allows for those impacts and disparities to be quantified. The findings of this thesis demonstrate quantitatively the ways preservation efforts in the case study cities are most often failing to achieve equity spatially, socially, or economically.

New tools will be needed for preservation to achieve equity in the future, and it is critical that the progress and effects of those tools can be evaluated empirically. This research develops one potential methodology by which municipal preservation agencies could analyze the outcomes and effects of their own preservation policies as well as facilitate the work of planning for future policies and priorities within the longitudinal histories of their city. Giving agencies this ability will allow them to answer the questions and concerns of residents and organizers; likewise, the data generated will allow agencies to engage in more interdisciplinary efforts with municipal agencies already using geospatial technologies to justify their work. In order for preservation to realize the social and moral good its practitioners have long held it to bear implicitly, it is critical to demonstrate the measurable existence of those values. This research presents a means to undertake that analysis; if the good of preservation remains more potentiality than

reality, this methodology has the potential to expand the current research and plan for a more equitable future for preservation efforts.

Chapter 2: Foundational Concepts

This chapter reviews the analytical and historical foundations for this thesis research, establishing the need for this research to fill a void in the current understanding of sociospatial representation in historic district designations. A literature review surveys existing empirical research on the effects of preservation designation, including economic, social, and spatial outcomes, as well as the use of geospatial technology, and geographic information systems (GIS) specifically, in historic preservation research. Two historical frameworks provide historic background on the practice of historic district designation and on redlining. Concerns about equity of representation and social benefit through historic district designations are traced back to the earliest historic districts, well before the advent of analytical research within the field, while answers to those concerns are shown to remain indeterminate. The use of redlining as a geospatial lens through which to begin making determinate statements about equity in preservation designations is established in the second framework, which reviews the development of redlining as a practice and the ways in which it was operationalized and institutionalized through government practices. Parallels between the history and contemporary impacts of historic district designations and redlining are examined. This chapter concludes with a review of the research questions this thesis addresses, connecting them to the existing body of preservation research and contextualizing them within the historic frameworks.

Literature Review

Preservation efforts in the United States are nearing their second centennial, but the use of empirical research to examine the tools and impacts of the field is largely limited to the last two decades. A survey of recent research on the effects of preservation has yielded a majority of the extant research focused on the economic impacts of preservation (Rypkema et al. 2011; Heintzelman and Altieri 2013; Been et al. 2015) but there have also been instances of research

into the social and cultural effects of preservation (Coulson and Leichenko 2004; Appler and Rumbach 2016; McCabe and Ellen 2016; Roberts 2020). References to the potential applications for geospatial research methodologies appear in literature from the early 2000s (Limp, 2000), but these methodologies have come into greater use in the last decade for the spatialized evaluation of both economic and social demographic metrics, typically referenced to historic districts within municipalities (Coulson and Leichenko 2004; Heintzelman and Altieri 2013; Been et al. 2015; Appler and Rumbach 2016; McCabe and Ellen 2016).

Economic analyses typically employ one or more standard methodological categories, as outlined by Randall Mason in a 2005 paper: cost studies, economic impact studies, regression analyses employing advanced statistical techniques, contingent valuation and choice modeling, and case studies. Standardized metrics for economic evaluations were proposed in a 2011 report for the Advisory Council on Historic Preservation (Rypkema et al. 2011) as a means to lend consistency and credibility to what the report described as critically needed research. Those metrics included: jobs, property value, heritage tourism, environmental measurements, and revitalization. Rypkema, through the preservation analytics firm PlaceEconomics, created a standard template for such economic reports utilizing several of the methodologies Mason (2005) described to analyze those standard metrics, which could be applied to geographic areas within boundaries of time, specific policies, specific preservation tools, or even specific political administrations (PlaceEconomics n.d.). Dozens of reports have been completed using this comprehensive methodology, including one on preservation in New York City on the fiftieth anniversary of New York's preservation ordinance that incorporated social metrics like population density and racial demographics in addition to the economic metrics (PlaceEconomics 2016). These graphic-intensive reports written in largely non-technical language have become ubiquitous for organizations and advocacy groups looking to share the value of their preservation work with the public. Academic research appears to consistently rely on the same methodologies and metrics for querying economic impact. Heintzelman and Altieri

(2013) used a regression analysis on real estate sales prices within a case study area – the metropolitan statistical area including Boston, Cambridge, and Quincy, Massachusetts – and spatialized that analysis to historic districts using a geographic information system to determine a net negative impact on property values from heritage designation. Similarly, Been et al (2015) created new statistical models to study the impact of designation on property values in historic districts and the immediately adjacent area in a case study of the city of New York. Their longitudinal analysis looked at trends between 1974 and 2009 and again employed GIS to spatialize the statistical analysis, finding that historic district designation correlated with an increase in property values in all boroughs except Manhattan.

Research examining social effects of preservation designation leaned more heavily toward non-empirical methodologies (e.g. literature reviews, policy analyses, and critical analyses), but when empirical methods were employed, they were often of the same types as the economic research – primarily statistical analyses utilizing geographic information systems to spatialize the data and the findings, using one or several cities as case studies. Coulson and Leichenko (2004) created an early geographic information system to examine social and housing metrics in Fort Worth, Texas, including population growth rates, racial and ethnic diversity, and vacancy and ownership rates. The GIS was used to average those data points across both historic districts and non-designated areas; the research concluded that designation did not affect neighborhood change in the case study city. Just over a decade later McCabe and Ellen (2016) examined designation's impact on neighborhood change in New York City using a multi-phase regression model with similar social and housing metrics – income, educational attainment, poverty rate, racial composition, homeownership, and median household rent – spatialized on census blocks queried for location within and adjacent to historic districts. Their findings supported a lack of racial demographic changes in neighborhoods after designation, similar to Coulson and Leichenko, but did find significant increases in socioeconomic metrics in the years after designation. The use of geospatial empirical research extends beyond the

spatializing of social or economic metrics as well. Appler & Rumbach (2016) demonstrated this in their research on historic preservation as a component of resilience-building in communities, which analyzed publicly accessible spatial dataset for their sufficiency in querying the relationship of flood plains and potential flood exposure to historic properties and sites across three case study states – Kentucky, Florida, and Colorado. While this research was less quantitative in its analysis, it pointed to the future use of geospatial technologies for studying the nexus of preservation and the physical effects of climate change, including sea level rise.

Coulson and Leichenko's research (2004) was also unique because it used urban planning theories of neighborhood change to develop statistical analysis methods through which to analyze preservation outcomes, whereas the majority of preservation research has examined designation as an isolated tool, despite it acting as part of urban planning frameworks in practice. The lack of urban policy context remains quite prevalent in preservation research. A literature review by Stephanie Ryberg-Webster and Kelly L Kinahan (2014) focused on recent preservation scholarship attempted to trace the historic and contemporary intersection of urban planning and preservation but found a relative lack of scholarship and writing examining this relationship. Their review included scholarship from the previous three decades and their findings reinforce those of this literature review: a plurality of contemporary preservation research is focused on its economic impacts, with other subject areas – ranging from the effects of power and politics on preservation to the realization of equity along racial and class divisions – being less fully developed; research co-contextualizing urban planning and preservation policies and practices were still at the very beginning of their development when the literature review was published.

Similarly underrepresented in the empirical research is the examination of the relationship between historic preservation and issues of equity, representation, or inclusion. An analytical

literature review published in the *International Journal of Heritage Studies* in 2021 reviewed all literature produced by historic preservation academicians through 2018 and found "meagre faculty productivity and low impact for intra-disciplinary preservation scholarship" (Wells 2021) on equity and social justice. The lack of empirical, data-driven, and quantitative research on questions of inequity in preservation can perpetuate the perception that preservation exists to serve the histories of white, upper class history, culture, spaces, and places (Ryberg-Webster and Kinahan 2014).

Overall empirical research in the field has continued to expand since Ryberg-Webster and Kinahan's (2014) literature review, but it is still limited to a relatively small pool of researchers. Of the twenty authors credited for the articles surveyed, one-third authored or co-authored more than one article and 20% were credited authors on three or more of the articles. While adjacent fields – planning, real estate, sociology, history – can certainly contribute to the academic research and literature around preservation, there appears to be significant space for preservationists – researchers and practitioners both – to more affirmatively further the body of research around their field.

This thesis will contribute to contemporary preservation research in several aspects. The research centers questions of equity, and specifically distributive justice, in preservation effects through the spatialization of preservation designation within the specific context of urban redlining, allowing for an inter-disciplinary historical and contemporary comparison of spatial and socioeconomic metrics. Cities are the unit of the selected case studies, but the use of the geographies of redlining to categorize urban boundaries of privilege and disprivilege and to spatialize data analysis allows for conclusions to be drawn for smaller areal units within the city. Through this focus, the research presented herein contributes to two underdeveloped branches of the growing body of empirical research on historic preservation. Although advanced statistical techniques are beyond the scope of this thesis, tools for standard statistical

calculations within the geographic information systems allowed for the quantitative analysis of selected data. The methodology developed also presents a potential avenue for ongoing research on urban preservation by agencies, organizations, and community members by reducing barriers of required specialized knowledge or skills.

Historical Framework: Landmark Designation of Historic Districts

When the Old and Historic District was established by zoning ordinance in Charleston, South Carolina in 1931, it was the culmination of more than a decade of work by a group of wealthy local women. What had begun as an effort to save an important singular piece of local architecture from demolition, a common motivator for early preservation efforts, changed the trajectory of modern American preservation when its cause was taken up by local architects and city officials who used the relatively new tool of the zoning ordinance to create a bounded geography around the valued spaces of downtown Charleston and provide protection to the properties within those boundaries through architectural review (Yuhl 2020). But the preservation of Charleston's historic city center was not undertaken to equitably, or even holistically, represent social or architectural history. The civilian effort that created the Society for the Preservation of Old Dwelling (SPOD) and led to the eventual ordinance was made up of white women, many of whom were descendants of Charleston's early enslavers, and the old dwellings' assigned value reflected that cultural history. Members viewed the buildings they were working to protect as an "effective symbolic vehicle for educating future generations of Charlestonians about their aesthetic inheritance… [and] visible remnants of an inherited set of values – of continuity, gentility, and racial order" (Yuhl 2020: 202). That framing buried the legacy of enslaved Black labor in building historic Charleston, the contributions of Black communities after emancipation, and the architectural manifestations of that history. The disparity reached its zenith in the decade before and after the 1931 preservation ordinance when SPOD members and other preservationists in Charleston advocated for the demolition of

vernacular structures within the historic district with historical connections to Black communities, an action which stands in direct opposition to the stated goals of preservation (Yuhl 2020). This history demonstrates the ways in which inequity, selective representation, and unequal effects are rooted in the very foundations of historic district designation practices.

Those concerns are not limited to Charleston, South Carolina, or even the South. Nearly four decades after Charleston, the concept of landmark historic districts began to take firm root in urban America, propelled by the expansion of the preservation profession and by the creation of national policy with a preservation focus, but perhaps most buoyed by the rise of demolition and redevelopment as the predominant approach to urban issues of housing scarcity and quality after World War II. Inner-city redevelopment coupled with interstate highway construction led to the demolition of large swaths of existing inner-city neighborhoods, destroying urban fabric and displacing communities en masse; the nascent field of urban preservation responded to this destructive activity with the creation of preservation policy and governing preservation bodies, starting with the Landmarks Preservation Commission in New York City, which could offer significant physical protection to urban fabric (Ryberg-Webster and Kinahan 2014). Through William Wilson's (1996) urban theory we can identify the destruction of inner-city areas for urban renewal schemes as part of a cycle of disinvestment that extends through history to culminate in clearances for the development of urban landscapes. This cycle was accelerated by redlining, which drove down property values and encouraged disinvestment, furthering deterioration of other properties which fueled displacement, encouraging further disinvestment ad nauseum until an area was slated for clearance (Wilson 1996). This was the historical moment at which preservation entered the public discourse on urban development, viewing itself as an alternative to mass demolition that could instead be supportive of community goals. Wilson's work suggests that those benefits were rarely, if ever, extended to the communities impacted at the origin of the disinvestment-to-preservation investment cycle.

That viewpoint is supported by research in Philadelphia that challenges the narrative of the field of preservation establishing itself as a direct result of galvanization due to demolition in the name of urban renewal. Instead, the research identified the narrow lens through which historic properties were qualified for designation. It credits planners, rather than preservationists, with saving the majority of older, and particularly residential, building stock. This was not an altruistic or socially-minded measure but a practical and economical one as planners sought to address major issues of development and need in the city with limited resources (Ryberg 2012). Those large areas of vernacular, residential construction may not have fit the early preservationists' historic lens but today they are often viewed as representing important social and cultural heritage, as well as architectural history and heritage. Similar trajectories can be seen in other cities, including New York, where preservation was launched around efforts to save singular examples of architectural achievement in Penn Station and later Grand Central Terminal before branching out to recognize unique character in neighborhoods through historic districts.

Throughout the development of district designation as a commonly used mechanism for preservation in cities across America, the questions of equity Yuhl (2020) raised in Charleston, and concern about who benefits from preservation raised by Wilson's (1996) urban theory remained. Carol Rose, writing about preservation and community in 1981, cited the work of Michael deHaven Newsom (1971) on race and preservation before laying out her own thoughts about current preservation practices. In "Blacks and Historic Preservation," Newsom raised concerns that Black communities, particularly poor communities, would be displaced as upwardly mobile white communities moved into rehabilitated and newly-branded historic neighborhoods. Newsom's conclusion was that Black history was not what preservationists were looking to preserve with their designations. Rose (1981) went on to describe the contemporary focus of preservation activity, community-building through preservation, which followed periods of preservation focused on patriotism and national memory and later artistic

and architectural achievement. Two of the outcomes of that focus, in Rose's view, are that communities, both historical over time and present-day, must be considered valuable as part of designation and the needs of the community must then be considered in preservation efforts. She raised questions around those outcomes, including long-term economic impacts on communities, such as effects on property values and rental rates, and designation's role in the displacement of existing communities along class and racial lines, and questioned how preservation advocates can maintain that fostering community-building is a tacit goal of preservation given the frequency of instances of displacement. Both Newsom (1971) and Rose (1981) raise questions, five and four decades ago respectively, that preservation researchers are still trying to effectively quantify and answer today. This is affected as much by what is designated and where designation occurs as by the ways in which designation is completed.

In the first chapter of *Giving Preservation a History*, Randall Mason and Max Page (2020) describe the process of defining a historic district, in this case a district in the Lower East Side of Manhattan, New York City that sought and achieved listing on the National Register of Historic Places: "Preservation advocates had to draw lines on the map to include buildings that helped build their case and excluded many others of equal cultural significance…the result was not a logical outline of a historic neighborhood but a segregated excerpt" (Mason and Page 2020: 4). This exercise in circuitous boundary creation was necessary to meet the designation requirements of the National Register, creating a final geography that "said little about history and much more about cultural politics and the practice of historic preservation today" (Mason and Page 2020: 4). However, the same designation criteria gymnastics are often required at the municipal level as well, particularly in cities which ascribe to the same National Register standards for designation value. The creation of preservation boundaries, whether for the first historic district or the next district, is not a straightforward one, nor one without bias. It is influenced by history, by residents, by aesthetics, but also by many outside forces, including political economy, influential institutions and organizations, and more.

The "carving out [of] valued and devalued spaces (and people)" (Yuhl 2020) that creates historic districts is described by Edward Soja's (2010) critical theory of spatial justice as the creation of exogeneous geographies of power; that is, geographies superimposed on existing space, which can be both just or unjust. Looking again at Mason and Page's (2020) example of drawing historic district boundaries, the authors describe the final boundaries of the district as bizarrely shaped, appearing like a "gerrymandered voting district" (Mason and Page, 2020: 3). Soja (2010) also takes the example of gerrymandering as an illustrative exogenous geography, and we can see within that type parallels to historic preservation districts. Soja describes electoral districts (the unit of gerrymandering) as socially constructed spaces with easily manipulable borders, much like neighborhoods. He goes on to describe the dual nature of politically organized space:

> Boundaries can be redrawn to serve both positive and negative purposes, giving greater or lesser representation to certain population groups on a kind of sliding scale of inequality. Sometimes positive and negative objectives are combined in tenuous balance, making it even more difficult to decide whether the results are spatially just. (Soja 2010: 38)

The relationship of this theory to historic preservation, and specifically to neighborhood-scale preservation through historic districts, is clear. Boundaries created by preservation designation delineate areas socially, historically, and spatially, representing both a past and present community. The decision of where to lay those lines is one that provides representation to certain histories and narratives, but can just as easily exclude histories and narratives, just as the choice of where to designate and where not to can easily exclude communities from historic representation. When boundaries of historic districts cut across blocks, through rear yards, and down streets, questions are raised about what narratives exist on either side of the lines and what is being favored through representation. If the disposition of representation is not being examined and queried over time, it can obscure whether that tenuous balance is being

achieved or whether the scales have been unjustly tipped to one social group's history or one historical narrative, creating inequity through preservation. The spatial research included in this thesis is a means to examine this balance of representation through a novel frame of a direct comparison of exogenous geographies created for the oppositional purposes of destruction and protection. For the purpose of this research, redlining represents explicitly unjust geographies created through mid-century urban planning policies of which historic district preservation policies were a part.

Historical Framework: Redlining in American Cities

The term *redlining* is now part of the common lexicon of urban race discrimination, understood as the operationalization of systemic racism in urban policy and public and private real estate sectors that denied standard mortgages in minority communities, particularly African American neighborhoods in inner-urban areas, based on the neighborhoods in which they lived rather than characteristics of the borrower or the property. Jean Pogge (1992) writes in *Redlining to Reinvestment* that the term was first used in the 1960s by community organizations in west Chicago, describing the discriminatory practices of local Savings and Loan associations, which refused to provide mortgages in neighborhoods they deemed susceptible to or experiencing changes in racial demographics, instead prioritizing segregated neighborhoods dominated by white families. Communities neighboring those areas experiencing or 'at risk' of integration were often deemed unstable as well. These institutions drew literal red lines, as well as financial boundaries, around these areas in cartographic representations, which guided the application of state power and capital (Pogge 1992). Although redlining was made illegal under Titles VIII through IX of the Civil Rights Act of 1968, known as the Fair Housing Act, the practice continued across urban America. In many cities, community organizations like those Pogge (1992) describes partnered with researchers and the media to demonstrate ongoing redlining and expose financial institutions in the years

after the Act's passage, often forcing financial institutions to discontinue the practice and commit to lending in previously disadvantaged areas (Aalbers 2011). After another decade of this work the *Federal Home Mortgage Disclosure Act* (HMDA) was passed in 1975, requiring lenders to report mortgage data, and the *Community Reinvestment Act* (CRA) was passed in 1977, creating actual repercussions for institutions which did not lend in the communities that deposited money with them. Only in 1990 was the HMDA expanded to require racial information about mortgage applicants, despite racial discrimination having been the hallmark of redlining and similar successor practices, finally allowing clear and accessible research on potential present-day redlining practices (Aalbers 2011).

Naming the practice of redlining in the later decades of the 20th century was a turning point that led to the dismembering of policies and practices that encouraged and supported redlining, but the framework had been actively working on the urban environment for nearly a century by that point. As early as 1919, the Chicago Commission on Race Relations acknowledged that African Americans were less able to secure mortgages and that lenders often refused to lend in predominantly African American neighborhoods (Hillier 2003). At that time there were no laws to prevent discrimination in mortgage and lending decisions; it was standard practice across the country. Redlining was mapped onto cities by private lenders, mortgage brokers, and appraisers, and was also mapped by federal institutions as surveys of lending risk or mortgage security starting in the 1930s.

Amy Hillier's research (2003, 2005) outlines the parameters of the map-making practices for the federal agencies involved: the Federal Housing Authority (FHA) and the Home Owners' Loan Corporation (HOLC). The FHA developed an initial risk rating system in the early 1930s and was mandated by the National Housing Act of 1934 to make surveys and studies as needed for the creation of a "sound" mortgage market (Hillier 2003). The agency created maps in various phases, but those most notoriously associated with redlining were completed as part of

their Housing Market Analyses between 1937 and 1942, the explicit intention of which was to create maps for internal use demarcating where the FHA could insure mortgages. The maps used a letter and color grading system with the lowest grade being 'D' and red. This was the same system used in the HOLC mortgage security maps being generated contemporaneously. At the same time, the FHA published a manual for mortgage underwriters, which detailed the grading system and which was shared widely with private lenders and other government institutions (Hillier 2003). Given that the FHA used their maps to influence their mortgage insurance instruments and encouraged lenders to also adopt the maps' gradations in order to receive the protections of that insurance, it is fair to say that the FHA both institutionalized and instrumentalized redlining practices, participating in the discriminatory activity of lenders and perpetuating the racial and social segregation which redlining wrought.

The Home Owners' Loan Corporation was created in 1933 as a subset organization of the Federal Home Loan Bank Board (FHLBB), part of a Depression-Era slate of programs to assist home owners in crisis. The HOLC made low-interest, long-term mortgages – then still a nascent concept – to homeowners in default and provided government bonds to lenders in exchange for the mortgages. These mortgages were made over a three-year period from 1933 to 1936. In 1935, the HOLC was also mandated to create residential security maps by its parent agency. The new City Survey Program would map real estate risk levels on any city with a population greater than 40,000 people – 239 cities were surveyed between 1935 and 1940. Similar to the FHA, the HOLC used a scale of four to grade neighborhood areas, assigning a color, a letter, and a numeric; e.g. 'A' or First Grade areas were shown in green. Field agents completed surveys to determine grades. These surveys required review of real estate markets and sales as well as interviews and consultations with relators, lenders, brokers, appraisers, and housing experts in each city. Unlike the FHA, the HOLC had completed its lending programs prior to starting the City Survey Program; therefore, findings of their survey efforts could not have impacted their lending practices. Also unlike the FHA, the HOLC did not publish or

distribute either their maps or their neighborhood area surveys. In fact, the HOLC was intentionally guarded about sharing their maps and they were accessible only to other federal agencies (meaning the FHA would have had access) and to the consultants in each city who helped to create them (Hillier 2005). For these reasons, the HOLC is generally considered to have institutionalized redlining through its maps, but it did not instrumentalize the practice (Hillier 2003, 2005; Aalbers, 2011).

There are undoubtedly significant similarities between the FHA Market Analysis Maps and the HOLC Residential Mortgage Security Maps. Given the instrumentalized nature of the FHA maps, one might rightly assume the FHA maps would be preferred for a geospatial comparison; however, only one of the FHA maps still exists, a map of Chicago preserved in a doctoral dissertation. The rest were destroyed, part of the settlement of two federal law suits alleging racially discriminatory home pricing in neighborhoods adjacent to historically redlined areas (Greer 2014). HOLC maps had a dissimilar fate and were re-discovered as an intact collection in the 1970s by Kenneth Jackson during research for his 1985 text *Crabgrass Frontier* (Hillier 2003). Since that time, they have been widely published and circulated, assuming the credit for creating the practice of redlining in common understanding and almost supplanting the FHA maps, for which there is comparatively minimal literature and research dedicated, in the history of urban mortgage policies. Despite the common misunderstanding of their role in the practice of redlining, HOLC maps are the only remaining extant maps spatializing the practice of redlining in the first half of the 20th century, making them an invaluable asset for urban research. They were recently digitized and georeferenced (Nelson et al. 2016) making them readily accessible for historic, social, and spatial research efforts.

The practice of redlining created new boundaries, meant to reflect not extant communities, but perceived borders of social and spatial relationships by those with financial power, namely lenders and real estate professionals. Stuart (2003) clarifies the value of these boundaries to

the real estate market as being necessary for the maintenance of homogeneity in urban spaces. In the 20th century, homogeneity along racial, ethnic, and class lines was considered critical for maintaining the value of real property in favored areas. Real estate professionals abstracted the social space which people inhabited down to its racial and social demographic dimensions and perpetuated the exogenous geographies they created through the creation of maps. Creating consensus in an urban market meant greater coordination, which allowed the real estate industry to further promote homogeneity and create or increase value in isolated areas. In a self-fulfilling cycle, Stuart argues that people are likely to conform to the boundaries created for them; the process of creating those boundaries reifies and exacerbates the differences on either side (Stuart 2003). The creation of boundaries along racial and class lines in any instance of redlining will perpetuate the racial and social segregation within those boundaries.

HOLC maps are visualizations of the boundaries of the institution of redlining – within the "right" boundaries, residents received financial support and privilege in the home ownership process; within the "wrong" boundaries communities were systematically disadvantaged and divested from those networks of financial privilege. Similarly, historic districts are boundaries drawn on a map – being within the bounds of the line merits the protection of preservation legislation and acknowledgement of historical narratives; outside of the bounds, the historical narrative of communities is viewed as less worthy. HOLC maps were created by a federal agency under the purview of the federal government; historic district designations are decided by panels of political appointees with cultural-political priorities. Soja's (2010) critical theory of spatial justice describes this means of boundary creation – "the imposition of political power, cultural domination, and social control over individuals, groups, and the places they inhabit" (Soja 2010: 32-33) – as generating exogeneous geographies of power that can be just or unjust. In the case of redlining, the geographies are unquestionably unjust. For preservation, the distinction is less clear and requires further research for a comprehensive answer to be possible.

Chapter 3: Methodology

The main aim of this thesis research is to examine whether preservation designations, and their impacts and benefits, are distributed equitably among people and spaces. In order to answer the primary question of equitable distribution, six sub-questions were developed to form the framework of the geospatial analysis:

- Does historic district designation follow the same spatial patterns of privilege and disprivilege as redlining?
- How has that spatial relationship changed over time?
- What socioeconomic changes have occurred in historic districts from the period of redlining through today?
- How do socioeconomic changes in historic districts relate to changes in surrounding areas?
- What social groups are benefitting from the effects of historic district designation?
- How does preservation policy support equity in historic designations?

A case-based methodology aims to answer these questions in the studied urban areas, but also to develop a geospatial methodology that can be utilized for other municipalities and expanded upon by future research. An initial analysis queried the spatial and temporal designation patterns in six case study cities, the selection criteria for which will be discussed later in this chapter, in order to answer the first two research questions. The expanded analysis examines historic and contemporary socioeconomic metrics – population density, racial demographics, median home value, unemployment, and poverty rate – over the geographic boundaries of historic districts, HOLC grade areas (determined by the letter grade, A through D, assigned on the HOLC Mortgage Security Maps), and city boundaries. Municipal preservation policy in the case study cities is reviewed alongside the findings of the expanded analysis, which provide answers to the third, fourth, and fifth research questions, and examined for interactions between policy and practice that contribute to the distribution of socioeconomic effects. This

chapter reviews how the case study cities were selected, how data was collected, the development of the geospatial methodology used in the analysis, and finally the limitations of the research and the data.

Case Study Selection

The selection of case study cities for the initial analysis was based on both historic and contemporary factors. The first criteria was that an HOLC map or maps must have been published for the urban area to facilitate the spatial analysis. The second criteria was that the case study cities have a population greater than 1.5 million in 1940, the closest decennial census to the publishing of the HOLC maps. This cut-off was established to ensure first that the historic population was large enough to increase the likelihood of racial and socioeconomic diversity within its population and, second, that the number of case studies would be viable for analysis within the time constraints of the work. This cut-off also led to the selection of case study cities with sufficiently robust open data programs developed that meant the datasets necessary for analysis would be available; initial data gathering found that this likelihood rapidly dropped the smaller the city was found to be in 1940.

1940 county-level census data on population sourced from Social Explorer (U.S. Census Bureau 2020) was used to establish the population levels for review, and six cities were found to have met the established criteria: Boston & Cambridge, Massachusetts; Chicago, Illinois; Detroit, Michigan; Los Angeles, California; Philadelphia, Pennsylvania and New York City, New York. Although two of New York City's five boroughs were of sufficient size to meet the selection criteria in their own right, the full city area was taken together for analysis. This selection of case studies provided geographic dispersion of study areas across regions of the United States, including the West Coast, Midwest, East Coast/Upper Atlantic, and New England.

The expanded analysis included two case study cities that were selected based on the findings of the initial analysis: Boston & Cambridge and New York City. The selection of those two case studies for the expanded analysis will be described in Chapter 5.

Data on Redlining and Historic Preservation

Publicly available data was used to create the geographic information systems used for both the initial and expanded analyses. The initial analysis utilized municipal datasets from case study cities for city boundaries and designated historic districts. The HOLC *Mortgage Security Maps* have been georeferenced and made available through the *Mapping Inequality: Redlining in New Deal America* platform, a project of led by the University of Richmond's Digital Scholarship Lab (Nelson et al. 2016). The expanded analysis utilized data from the decennial census and American Community Survey (five-year estimates), provided by the U.S. Census Bureau in a georeferenced format for use in geospatial analyses. Refence files for census geographics - tracts, blocks, and block groups – was also provided by the U.S. Census Bureau. Historic decennial census data, used for analysis of socioeconomic conditions prior to 2000, was sourced through the National Historical Geographic Information System (NHGIS), a project of the Integrated Public Use Microdata Series (IPUMS) from the University of Minnesota, which has spatialized historic data through 1790 to GIS boundary files of U.S. census geographies.

Methods of Analysis

Geographic information systems were used to conduct both the initial and expanded analyses. An independent GIS incorporating spatial layers was created for each of the case study cities in the initial analysis and socioeconomic data layers were added to the GIS for the expanded analysis case studies. The methodologies developed will be reviewed briefly in this section; the

technical appendix (Appendix A) also provides specific information on the construction and analytical uses of the GIS.

The initial analysis examined the proportional relationships of land area within redlining boundaries to the city's full land area and the land area of historic districts within redlining boundaries to total of designated land area in the city. HOLC Mortgage Security map data, historic district boundaries, and city boundaries were introduced into the GIS. HOLC grade areas were sorted by those grades – A through D – and historic districts were grouped based on the grade area they were within. Multi-part historic districts, such as Philadelphia's Historic Street Paving Thematic District, were extrapolated into their constituent areas and those areas were divided among the HOLC grade areas just as the contiguous districts had been. The area, in acres, of historic districts in each HOLC grade area, as well as HOLC areas themselves, were then calculated using GIS tools. The result quantified each HOLC grade area as a percentage of the full city land area, and historic districts within each HOLC grade area as a percentage of the total of designated districts in the city. Examining the proportionality between those percentages answers the question of whether historic district designations follow the same spatial patterns of privilege and disprivilege as redlining.

To understand how those spatial relationships have changed over time, the year of designation for each historic district was added manually where it was not already part of historic district data sets. Historic districts were selected based on designation periods, typically pre-1980 (when redlining as a practice is generally acknowledged to have stopped), 1980-1999, and 2000 or later, and counted. Quantifying the number of districts established in each time period illustrative trends, or a lack thereof, in designation in privileged and disprivileged areas.

The expanded analysis built on the initial analysis in Boston & Cambridge and in New York City. Census geographies – block groups (2019 ACS), blocks (2010 census), and census tracts (1940, 1970, and 1980 censuses) – were added to the GIS along with data from those Censuses

and American Community Surveys, including population counts, racial demographics, median home values, unemployment rates, and poverty rates, which were correlated spatially to their respective census geographies. This allowed the socioeconomic data to be examined spatially for trends based on the geographic boundaries of interest, in this case the historic district and redlining boundaries. Concurrent with the geospatial analysis, the municipal preservation policy for both case study cities was reviewed for its stated purpose, preservation values, and power structures and interrogated for connections between policy and the socioeconomic and distributive effects as found in the quantitative analysis.

To examine the social metric of population density in the contemporary data, census blocks centered within redlining and historic district boundaries were queried for the sum of the total population in those areas and divided by the area, in acres, calculated in the initial analysis for each boundary. To analyze the racial demographics, the same method was used, but sum totals were calculated using GIS for each racial group and converted into percentages of the population by the researcher. Economic metrics were analyzed in a similar manner; for both unemployment and poverty rate, census block groups centered within redlining and historic district boundaries were queried for the sum total population, population living below the poverty rate, and population unemployed while in the labor force. From that data unemployment and poverty rates for historic districts and HOLC grade areas could be calculated. The same process was used for analyzing median home values, except that all census block groups intersecting the geographic boundaries were included. Social metrics were examined spatially for historic districts in each HOLC grade area, areas outside of historic districts in each HOLC grade area, all historic districts taken together, and the city as a whole.

The expanded analysis used the same methodology for analyzing the historic socioeconomic data, with minor modifications, allowing the analysis to expand temporally and identify trends in designated and undesignated, privileged and disprivileged, areas over time. Census data was

used from the 1940, 1970 (in New York), and 1980 (in Boston) decennial censuses. 1970 and 1980 were the nearest census years to the designation of the majority of historic districts in redlined areas in New York and Boston, respectively; this selection for a intermediate data point will be further discussed in Chapters 6 and 7. Social and economic metrics were examined by scribing the historic census tract boundaries to the HOLC and historic district boundaries and using a proportional analysis method of re-calculating the data for the new boundaries, based on the percentage of the initial census tract that falls within the boundary. This method was used to examine population density, racial demographics, and unemployment rates for all three census years. Poverty rates and average median home values were analyzed using the same method where data was available. The analysis of historic and contemporary socioeconomic data together allowed for changes over time to be quantified in historic districts and in the surrounding areas and for relationships of parity or disparity in those changes to be established and quantified as well. In particular, understanding the current social groups residing within historic districts and the historic communities of those areas highlighted what populations were receiving the economic benefits of designation, relating directly to the distributive effects of designation.

An individual district in each city, one each in Manhattan and Brooklyn in New York, were selected as part of the case study analysis. The designation reports were reviewed and a sociospatial analysis was conducted for that district over the same time period of 1940-2010. A narrative analysis was used to compare the social, spatial, and cultural histories and values included in the designation reports with the quantitative representation of social and economic histories and trends found in the spatial analysis.

Assumptions and Limitations

This research relies on publicly available datasets, primarily provided by government institutions (federal and municipal agencies) and research institutions. It is assumed that this data is both accurate and comprehensive through the date of the last update or issuance. In the case of historic district boundaries, the data cannot include proposed historic districts or those in the process of designation. The districts in this liminal space are not available publicly for the majority of case study cities and cannot be accounted for in this research.

There are also limitations associated with several of the data sets. The urban areas represented in the HOLC maps covered only residential areas; industrial, commercial, park land and other land uses are not differentiated and for the purposes of this research are treated as "other" areas. The majority of designated historic districts also cover residential areas, although the percentage of districts within "other" areas varies significantly by city. The inclusion of these ungraded or "other" areas in the geospatial analysis attempts to mitigate this limitation, but other historic mechanisms of creating urban geographies of privilege would have to be used to fully analyze these spaces, which is beyond the scope of this these. Additionally, areas where case study cities have experienced significant growth, retraction, or changes in land use to or away from residential use may not be accurately represented.

The spatial analysis utilizes land area (acres) as its unit of measurement, rather than smaller units such as tax lots or individual buildings. This necessarily means that extraneous features of districts and neighborhoods – sidewalks, streets, and green space – are included in the area calculation. This is consistent for both the HOLC and historic district areas utilized, and the understanding that the grade area boundaries contain primarily residential lots may help to minimize the impact of the selected unit. While there is variation in the size of lots within the residential land use category, the differentials are less than between residential and industrial lots, for example.

There are also limitations inherent to the use of historic data, which impacts the sociospatial analysis. Older datasets tend to be correlated to larger scale census geography – census tracts – because block and block group modules were not used historically. This necessitates the assumption that social and economic metrics are homogenous – or evenly dispersed – across the data module and will be accurately represented by a proportional calculation on a partial module. Based on the standard of uniform population counts and social homogeneity within census tract boundaries established by the U.S. Census Bureau (1994) and the foundational research for this thesis, which supports the assumption that racial and ethnic communities are more likely to be clustered than diffuse, the impact of this limitation is acceptable, and necessary to allow for the use of historic data metrics.

The assumptions and limitations, particularly as they pertain to the creation, management, and use of the geographic information systems, are discussed in greater detail in Appendix A.

Chapter 4: Spatial Representation through Historic Preservation

The initial analysis examines spatial representation as one aspect of the distributive effects of preservation. The proportional relationship of land area within historic redlining boundaries, and boundaries created by the other assigned HOLC grades, to the full urban land area were compared to the proportional relationship of the land area of historic districts within redlined, and other HOLC graded area, boundaries to the total designated land area in the city. Redlined areas are representative of disinvestment and disfranchisement, but they are also representative of specific social groups that experienced historic discrimination through redlining. Quantitatively examining those spatialized geographies then becomes a means to understand not just where designations are located but what social groups' historical narratives are represented within their boundaries. Proportional representation – when the percentages of each spatial metric are in line – indicates a neutral correlation between preservation designation and redlining, and its subsequent urban policies. Over- or under-representation in historically redlined areas could indicate negative or positive correlations, respectively, and warrant further examination and analysis.

Six cities were taken as case studies for the initial proportional analysis based on the size of their population, greater than 1.5 million residents, in 1940 and their geographic dispersion across the country. The analysis did not reveal consistent trends across all case study cities; instead, there was an equal mix between cities in which redlined areas were over- and under-represented by designation, as shown in the table below.

Redlined Areas Under-Represented by Designation	Redlined Areas Over-Represented by Designation
Detroit	Boston & Cambridge
Los Angeles	Chicago
New York City	Philadelphia

When the designation year of districts was added to the spatial analysis, spatiotemporal trends of increasing numbers of historic district designations in historically disprivileged areas over the last two decades emerged in three cities: Chicago, Detroit, and New York. The analysis of each individual city allowed for connections between the geographies being queried and the preservation practice of each city, historic and contemporary, to provide nuance to the interpretation of the quantitative data. This context strongly emphasizes the hyper-local nature of preservation policy and practice, and the foundational values that support those practices in each city and region. It also highlights the potential for similar geospatial analyses in other municipalities. Each case study is analyzed and the initial analysis findings are discussed in the following sections.

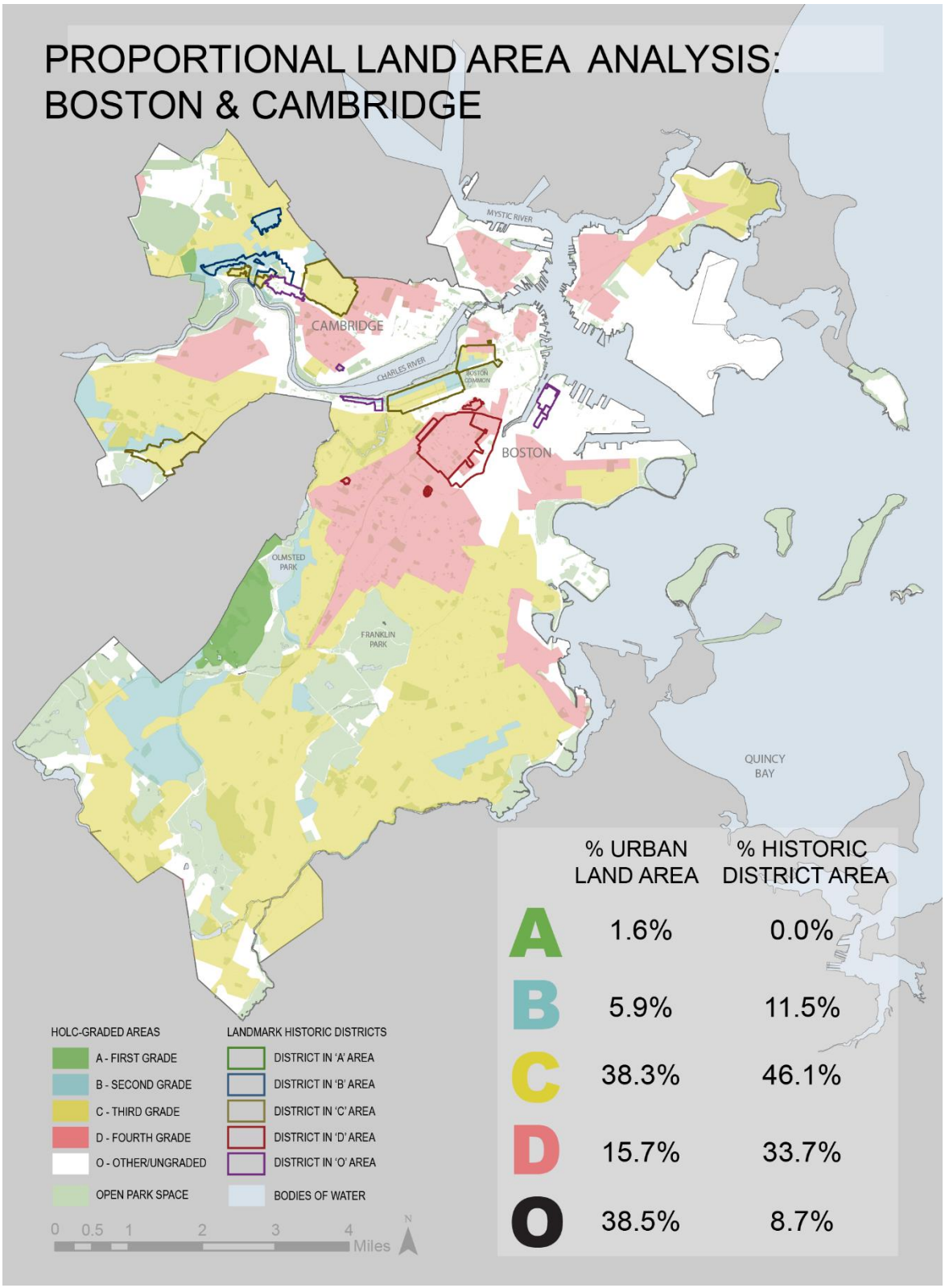

Figure 1 Proportional analysis of spatial relationship between designated historic districts and HOLC Mortgage Security grades areas in Boston & Cambridge in 2021. Map by author.

Boston - Cambridge

An initial spatial analysis of Boston alone found the most significant over-representation of historically under-privileged areas in historic district designation of any city studied. Nearly half, 49.5%, of Boston historic districts are located in redlined areas despite them making up only 15% of the city's land area in HOLC maps. Another 42.6% are within historically C-graded areas with small sections of B-graded areas on the fringes of those districts; this is proportional with the 40% of city land area that was historically C-graded. No historic districts are fully or even majority located in historically A- or B-graded areas, despite these grade areas making up 7% of the city's land area, and a small portion of historic district area, 7.8%, designates a single district of non-residential waterfront industrial area that was not graded in HOLC maps.

The initial analysis was then expanded to encompass the conterminous city of Cambridge for several reasons. First, the HOLC maps treat the two cities as contiguous, with the northern end of Boston sharing a map with Cambridge. Second, Cambridge and Boston are colloquially understood as related urban environments in a similar fashion to the boroughs of New York City – linked but unique. When examining the 1940 census data used to establish urban populations and cut-offs for case study cities, they were viewed as a two-county metropolitan area to meet the standard of 1.5 million residents. Incorporating Cambridge and its historic districts into the spatial analysis increases the designated land areas within historically C graded areas to 46.1%, an over-representation of the 38.3% of land area that was historically C-graded. Large historic districts in historically B-graded areas of Cambridge bring those districts to just over 10% of the designated area; 5.9% of the cities' land area was historically B-graded.

Between Boston and Cambridge there are clear differences in spatial representation. In Cambridge, areas were redlined for the presence of Black communities; in Boston, redlined areas were typically disprivileged for their higher European immigrant populations. In Cambridge, there are no historic districts, architectural conservation districts, or neighborhood

conservation districts in redlined areas. Instead, historic districts in B-graded and C-graded areas cover land area 4 times and 2 times their proportional size, respectively. Examining the urban area cumulatively, the result of these differences is that B- and C-graded areas are now proportionally over-represented. Redlined, D-graded areas, are still largely over-represented, which clearly demonstrates that spatial representation alone does not necessarily equate to equity in social narratives. The sociospatial differences evident here will be further discussed in the next chapter.

Spatiotemporally, Boston-Cambridge's historic districts were sorted into three designation time periods: during active redlining practices (pre-1980), pre-21st century (1980-1999), and recent designations (2000-present). Of 15 total historic districts, only 3 have been designated in the last two decades. Two of those three are Neighborhood Conservation Districts, meaning their designation was solicited by the community itself and typically offers less protection of the physical built environment than historic landmark district designations. More than 80% of designations occurred between 1980 and 1999; 60% occurred in the 1980s alone.

Historic district designations in Boston-Cambridge are proportionally representing both historically privileged and disprivileged urban areas currently. There are three pending historic districts awaiting study and reports for designation in Boston and a new neighborhood conservation district being studied in Cambridge. The potential districts are located in historically 'C' and 'D' graded areas as well, continuing that perception of proportionality. The equitable representation of communities within those areas is a question worthy of further review, however, and equity is a question to be considered in both cities if more active designation periods are to occur in the future.

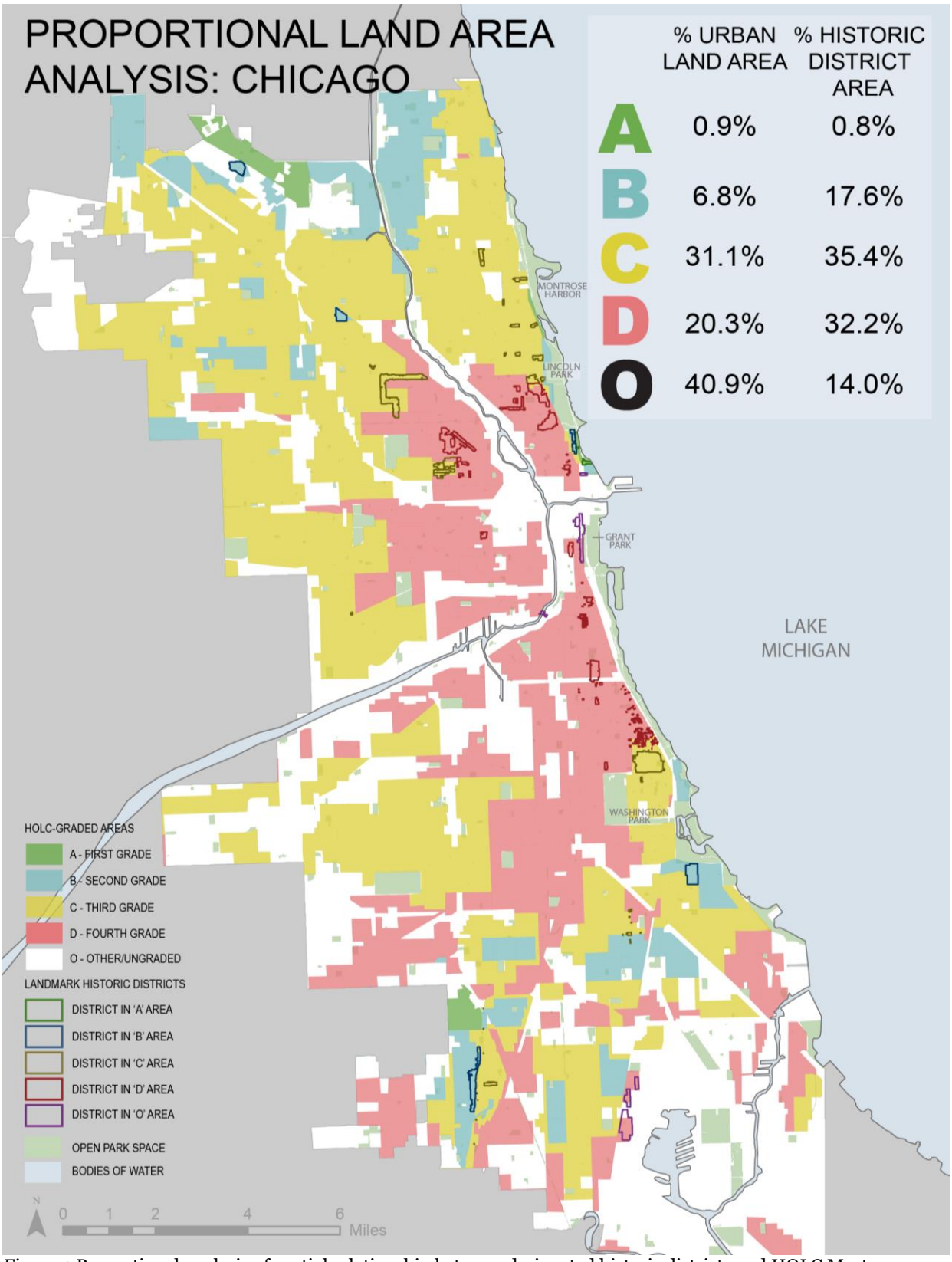

Figure 2 Proportional analysis of spatial relationship between designated historic districts and HOLC Mortgage Security grades areas in Chicago in 2021. Map by author.

Chicago

The initial analysis of Chicago found that designations are proportionally representative of all four HOLC grade areas. Redlined areas have a slightly greater than proportional representation, and B-graded areas are notably over-represented. Significant increases in the number of designations made in historically disprivileged areas over the last two decades indicate that proportional representation is likely recently achieved for those areas, whereas designations in historically privileged were made earlier.

Slightly more than 40% of Chicago's land area was ungraded by HOLC mortgage security maps, due largely to the industrial uses still occurring within the city in the 1930s and to swaths of commercial land use following transit corridors. Of the 60% of land area assigned a grade in HOLC maps, just over half, 31.1%, received a C grade and another third, 20.3% received a D grade. Geographically, the disposition of area grades was similar to Boston; redlined areas surrounded the city's downtown, expanding out north, west, and particularly south. C-graded areas framed the outskirts of the redlining, particularly on the north and west sides of the city. A-graded areas, less than 1% of the city, and B-graded areas, 6.8% of city land area, are dispersed at the outskirts of the city and clustered at the northern urban boundary. Chicago is consistently recognized as among the most continuously segregated cities in America (Frey 2015; Frey 2020) and the clustering of redlined areas is indicative of that racial and ethnic segregation.

When compared to areas of Chicago designated as historic preservation districts, representation is proportional in A- and C-graded areas. B-graded areas are over-represented by a margin of nearly 3x and D-graded areas are over-represented by a margin of 1.5x. When looking at that representation spatiotemporally, the number of designations in C- and D-graded areas in the last two decades equals or surpasses the total designations in the three decades prior. These large increases in the number of designated areas brought these

historically under-privileged areas to proportional representation only recently, whereas A- and B-graded areas achieved that milestone prior to the turn of the century. Two rounds of administrative changes were made to the City of Chicago Landmark Ordinance around the turn of the century, in 1997 and 1999, including the inclusion of a tax incentive for the preservation of structures (Kamin 2017). This may explain the increase in number of designations, but not necessarily their clustering in C- and D-graded areas. Further analysis of the increased rate of designation, and the shift in district locations, could provide valuable information for efforts to maintain equitable spatial representation in future designations.

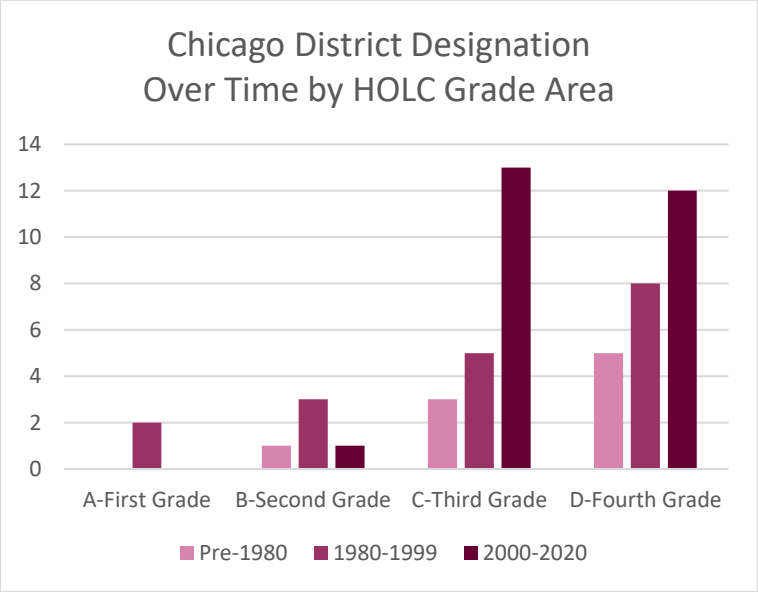

Figure 3 Spatialized analysis of historic district designations in Chicago based on HOLC grade areas districts are located within. Based on current designations as of January 2021.

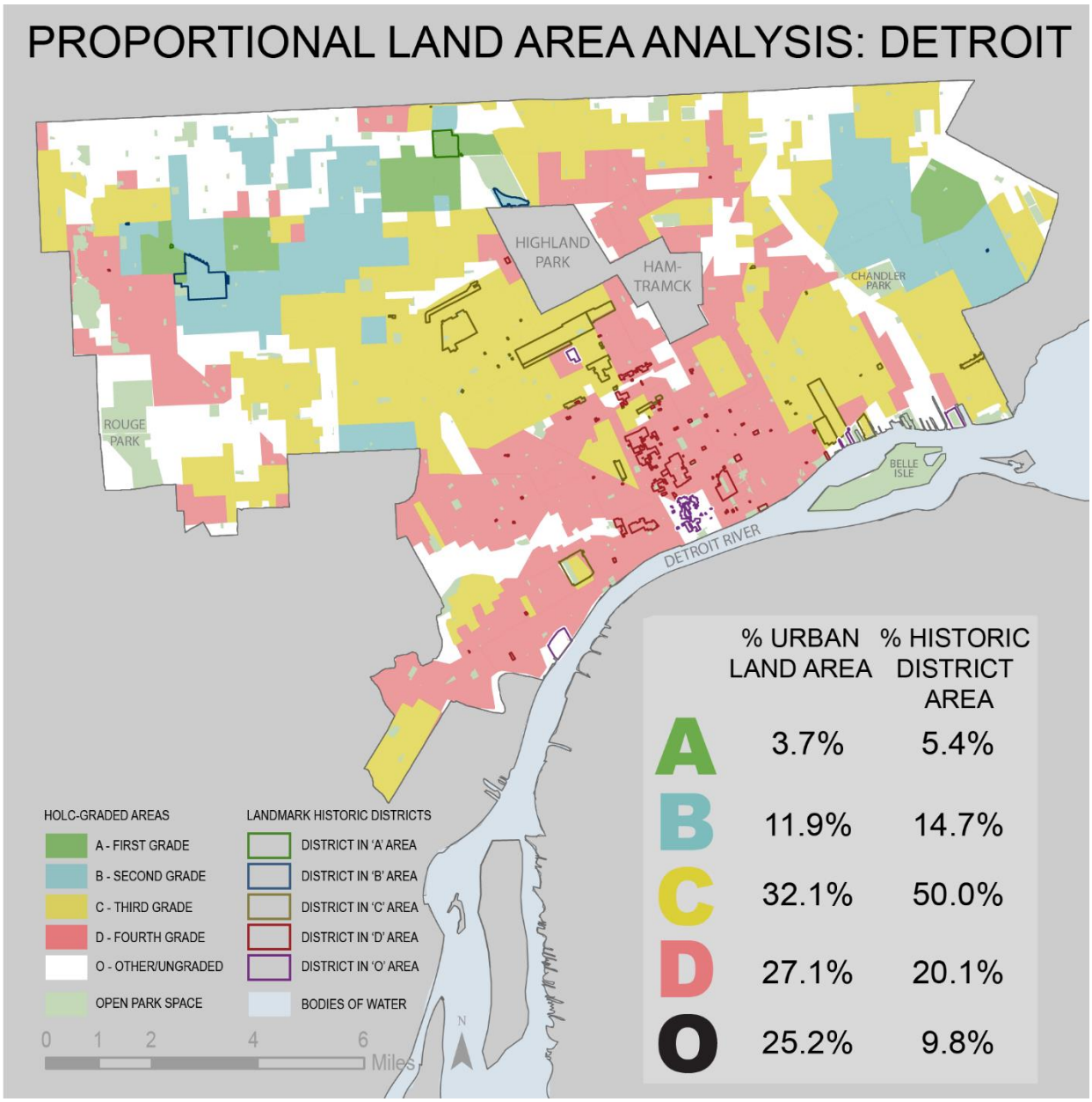

Figure 4 Proportional analysis of spatial relationship between designated historic districts and HOLC Mortgage Security grades areas in Detroit in 2021. Map by author.

Detroit

In Detroit, redlined areas are not proportionally represented by historic district designations. Historic districts in redlined areas are 20% of the designated land area in the city, but redlined land area is 27% of the city area overall. Historic districts in C-graded areas make up half of all designated land areas, although C-graded areas are just over 30% of the urban land area. Historically privileged areas of Detroit are proportionally represented through designation. Although redlined areas remain under-represented in Detroit, designation trends show steady increases in the number of designations in redlined areas, significantly higher than in any other areas of the city, so the outlook for Detroit to achieve proportional representation in the coming years is good.

Detroit, like Chicago, is a midwestern city with industrial roots. However, two unincorporated cities surrounding large industrial areas are located in the middle of metro Detroit, and because those areas are not included in the city's boundaries, Detroit had the lowest percentage of ungraded HOLC area of any case study city at 25%. Redlined areas are clustered along the river and around the industrial sub-cities. Larger sections of A- and B- graded areas remain on the outskirts while C-grade areas infill the middle. Similar to Boston, the areas on the waterfront are home to primarily European immigrants; Black communities lived largely in redlined areas on the periphery and outside of the formal boundaries of the city (Nelson et al. 1939a).

With that geographic framing in mind, the spatial analysis examined the land area of Detroit's 142 historic districts. The large number of historic districts in Detroit is due in part to how the concept of a historic district is defined in their City Code, which does not differentiate between a single built entity as an individual landmark and a collection of built entities or sites: "An historic district shall include an area or group of areas, not necessarily with contiguous boundaries, that contains one resource or a group of resources that are related by history, architecture, archeology, engineering, or culture of particular significance to the City, the state,

or the United States of America" (City of Detroit Code 2019). When the large number of districts are considered as land area, there appears to be proportional representation in historically privileged A- and B- graded areas and a minimal underrepresentation of D-graded areas. There is a notable over-representation of designated sites in C-graded areas.

The spatiotemporal analysis shows an increase in designations in each subsequent time period for C- and D- graded areas. The large number of historic districts in D-graded areas, while those areas remain underrepresented as a function of land area, indicate that historic districts in those areas are more likely to be small sites with only single or small numbers of parcels included. However, if designations in those areas continues at the current pace, or if larger areas can be identified for preservation, proportional representation across Detroit could easily be achieved in the foreseeable future.

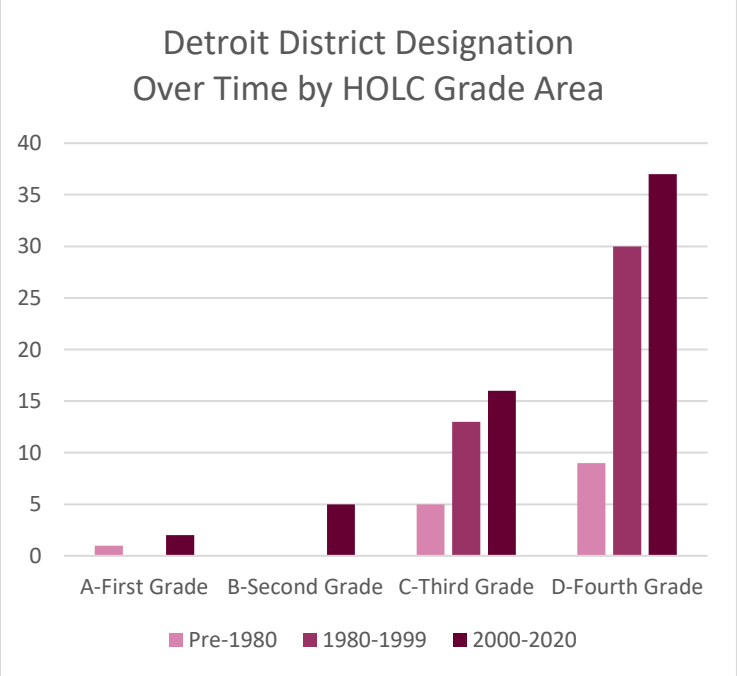

Figure 5 Spatialized analysis of historic district designations in Detroit based on HOLC grade areas districts are located within. Based on current designations as of January 2021.

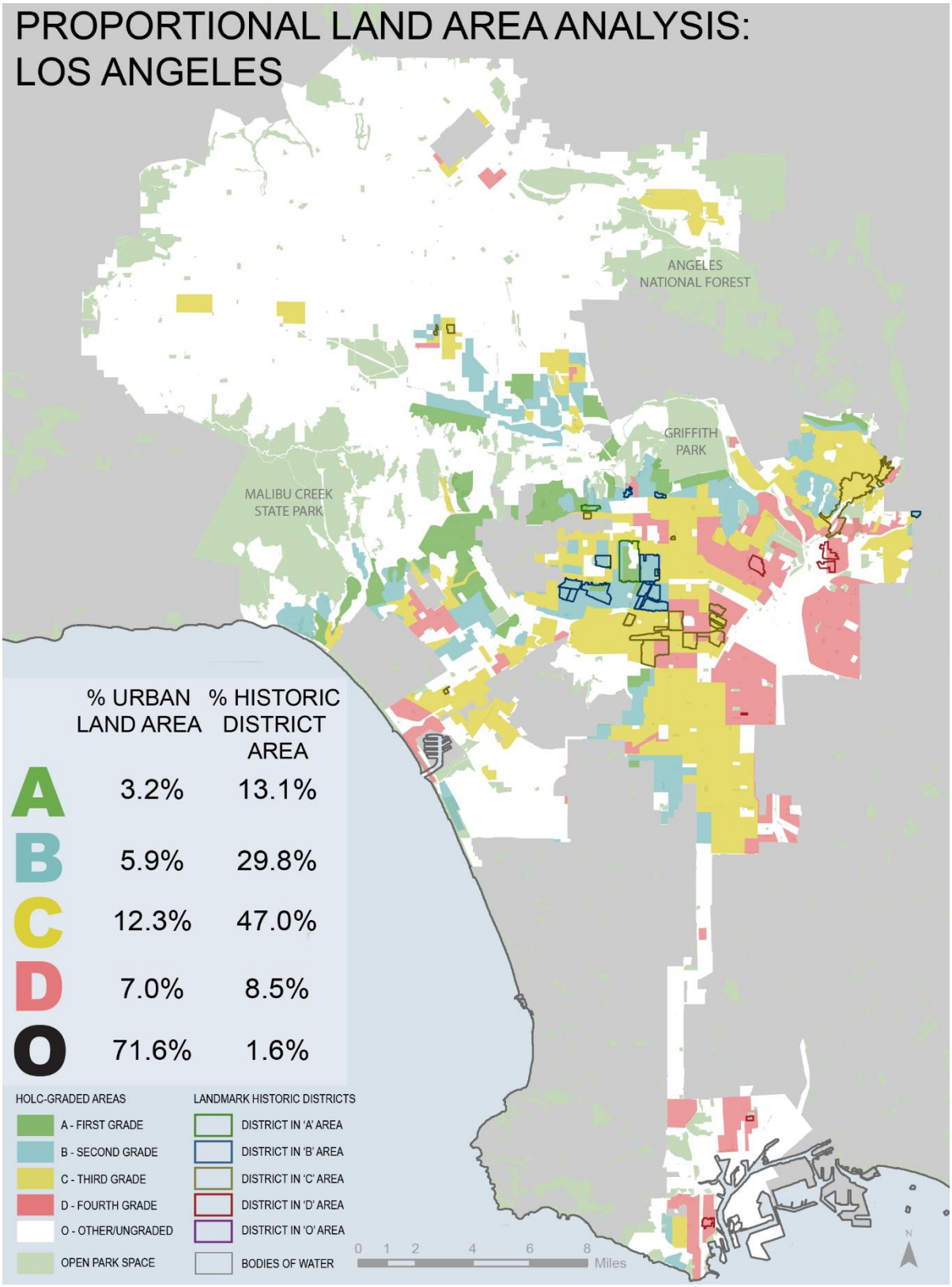

Figure 6 Proportional analysis of spatial relationship between designated Historic Preservation Overlay Zones and HOLC Mortgage Security grades areas in Los Angeles in 2021. Map by author.

Los Angeles

The initial spatial analysis of Los Angeles (LA), as shown in Figure 6, found massive over-representation in designations in A-, B-, and C- graded areas. Redlined areas were just proportionally represented at 7% of urban land area and 8.5% of designated land area. The findings appeared skewed by the more than 70% of urban land area that was ungraded, meaning non-residential, in the HOLC Mortgage Security Maps compared to the 1.6% of Los Angeles historic districts located in that ungraded area. This indicated that the majority of LA historic districts are in residential areas and suggested that a more accurate understanding of representation might be gleaned by excluding the ungraded areas from the proportional analysis. The revised spatial analysis found that the relationship between designated land area and graded land area in A-, B-, and C- graded areas was proportional and that redlined areas are significantly represented.

After the 70% of the city's current land area that was non-residential or unincorporated, and therefore ungraded, in the HOLC maps, the remaining 28.4% was majority C-graded, at 12.3%, followed by 7.0% D-graded, 5.9% B-graded and only 3.2% A-graded. Although, the representation of redlined, D-graded areas appeared to be proportional, the significant over-representation of designated districts in other graded areas – between four- and five-fold increases between HOLC grade area and designated land area – indicated that representation across these areas may still not be equitable.

One factor in that overrepresentation is that almost none of the HOLC ungraded area has today been designated for historic preservation, only 1.6%, making the relative proportion of designated areas typically greater than their related share of the HOLC graded land area across all areas. To further interrogate the question of equivalency, the analysis was reconsidered, taking each grade area as a percentage of all areas that were graded in HOLC maps, leading the proportions to break down differently: 11.2% A-graded, 20.9% B-graded, 43.3% C-graded, and 24.6% D-graded. When those proportions are compared to the proportional division of historic district areas, as in the following figure, a different conclusion emerges. A- and C- graded areas are now proportionally related, and B-graded areas emerge as slightly overly-represented by a difference of 9 percentage points. Redlined, D-graded areas are now understood as under-represented by 16 percentage points.

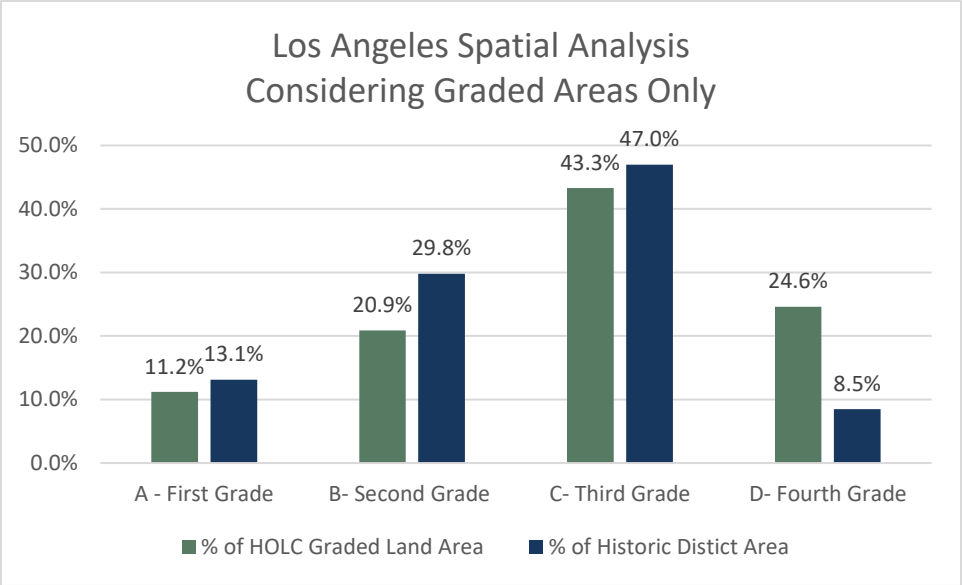

Figure 7 Findings of the revised spatial analysis for Los Angeles, omitting areas ungraded in the HOLC Mortgage Security Maps.

Examining trends of historic district designations in historically privileged and disprivileged areas in Los Angeles across the three time periods used in other cities showed increasing designations across all grade areas. However, the city of Los Angeles did not adopt its Historic Preservation Overlay Zone ordinance (LA Municipal Code Section 12.20.03) until 1979, and the

first designation did not occur until 1983, making the active redlining period null for consideration in this case (Office of Historic Resources n.d.). Los Angeles does have another temporal touchstone not found in the other case studies, though; SurveyLA, a city-wide historic resource survey, was conducted between 2010 and 2017 and involved the legal survey of nearly a million parcels across the city. The survey included identification of significant historic resources, one goal of which was to provide a comprehensive resource that could be used for future planning and preservation efforts (Los Angeles City Planning n.d.). To examine the initial impact of the survey, Los Angeles designations were reviewed for time periods representing the first decade of designation (pre-1990), the interim period prior to the commencement of SurveyLA (1990-2009), and the period during and after SurveyLA (2010-present). This analysis is shown in the figure below.

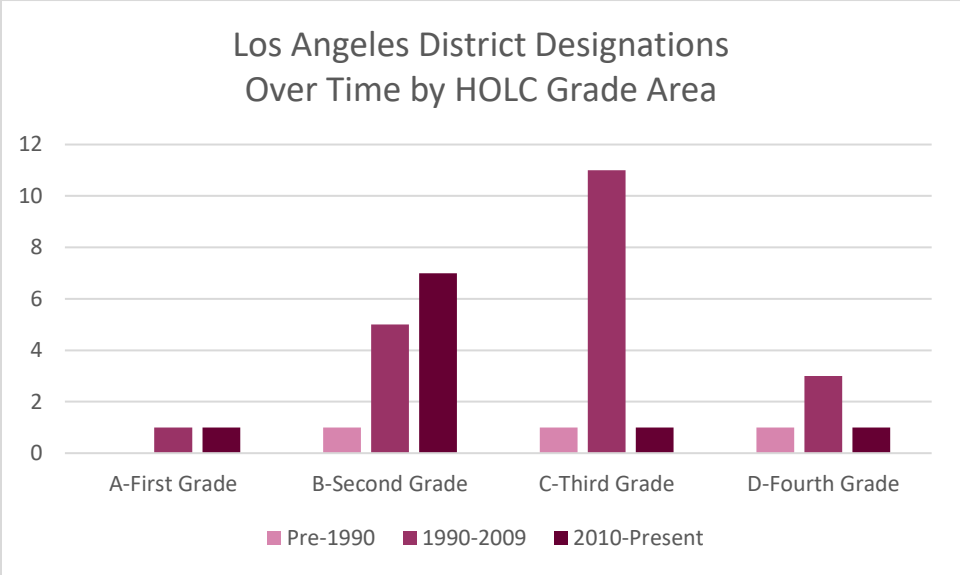

Figure 8 Spatialized analysis of HPOZ designations in Los Angeles, based on HOLC grade areas districts are located within, taking the period since SurveyLA's initiation as the most recent time period of analysis. Based on current designations as of January 2021.

The spatiotemporal analysis showed that, from single designations in each area in early preservation work, 1990-2009 saw increasing designation trends in all grade areas. These were greatest in C-graded areas, with 11 designations between 1990 and 2009 – activity which brought those areas to the proportional representation they have today, and which follows

logically from the large land area that was C-graded. B- and D- grade areas were also increasing, at a slower pace. In the last decade, since LA began its comprehensive survey, designations have continued to increase in B-graded areas, with seven subsequent designations, while falling off in historically under-privileged and redlined areas, with only one designation each, suggesting the resource inventory instrument itself may systematically reproduce devaluations similar to those produced by HOLC grading practices nearly a century earlier. This is reflected in the findings of the spatial analysis as well, as B-graded areas are now over-represented in historic designation, while redlined areas have faltered. This correlation raises questions of the application of a relatively new preservation tool and its contributions to equity in the practice of the field.

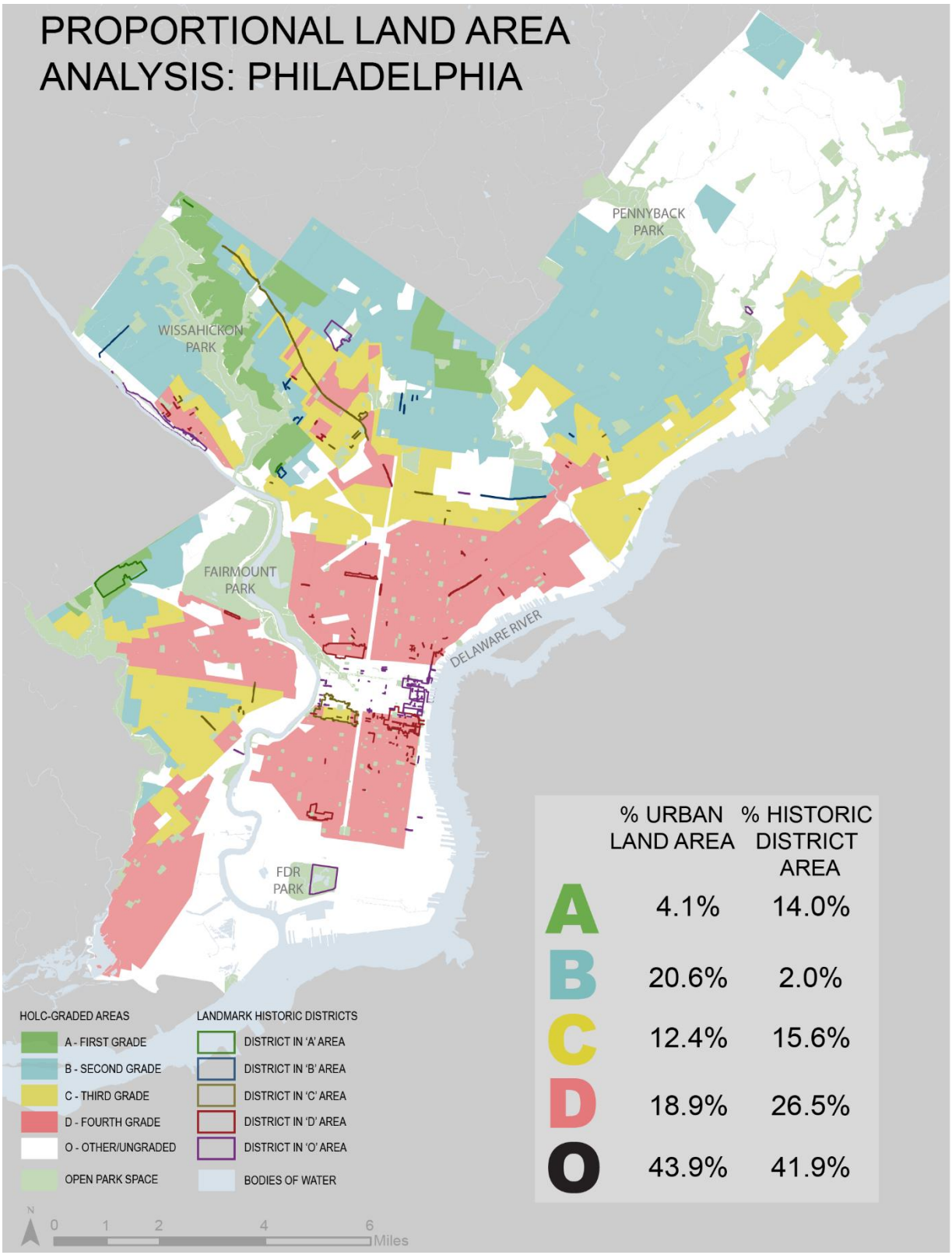

Figure 9 Proportional analysis of spatial relationship between designated historic districts and HOLC Mortgage Security grades areas in Philadelphia in 2021. Map by author.

Philadelphia

Philadelphia's seventeen historic districts are distributed nearly proportionally across all HOLC-grade areas, with the exception of historically higher-rated 'B' grade areas which are under-represented by a margin of more than fifteen percentage points. In contrast, 'A' graded areas are notably over-represented, and redlined areas are slightly over-represented. The designation of large parks and green spaces, as well as the non-residential Old City, which were not graded in mortgage security maps, mean that Philadelphia is the only city in which ungraded areas were proportionally represented through designation. Also unique to Philadelphia is the large multi-part Historic Street Paving Thematic Historic District, made up of 328 blocks throughout the city which retain historic paving materials (Fetzer et. al., 1998). Intersecting all HOLC-grade areas, this city-wide district contributes to the proportionality of designated areas.

One critical caveat to the proportionality of Philadelphia's current designations is that the city has designated only 2% of its built environment. Compared to similarly-sized Detroit, Philadelphia has one-tenth the number of historic districts covering less than half of the land area. The lack of designated areas is apparent in the spatiotemporal analysis of Philadelphia as well. Nearly equal numbers of districts were designated in the period from the enacting of Philadelphia's Historic Preservation Ordinance in 1985 to 2000 and in the decades since.

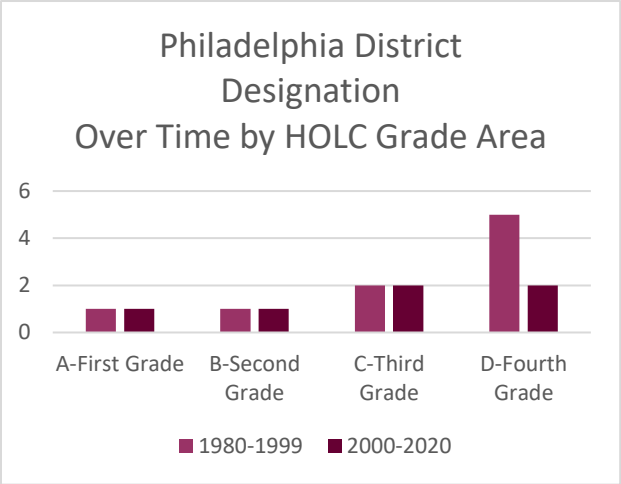

Figure 10 Spatialized analysis of historic district designations in Philadelphia, based on HOLC grade areas districts are located within. Based on current designations as of January 2021.

The city is preparing to undertake a city-wide Historic Resource Inventory, beginning in 2021, at the urging of a Historic Preservation Task Force empaneled by the current mayor in 2017, with the stated goal of increasing designations such that by 2035 the city is a national leader in preservation (Philadelphia Historic Preservation Task Force 2019). The question then becomes whether the current level of representation in historically disprivileged areas, and through that the historic narratives of disprivileged communities, will be maintained as the preservation program is scaled up in Philadelphia.

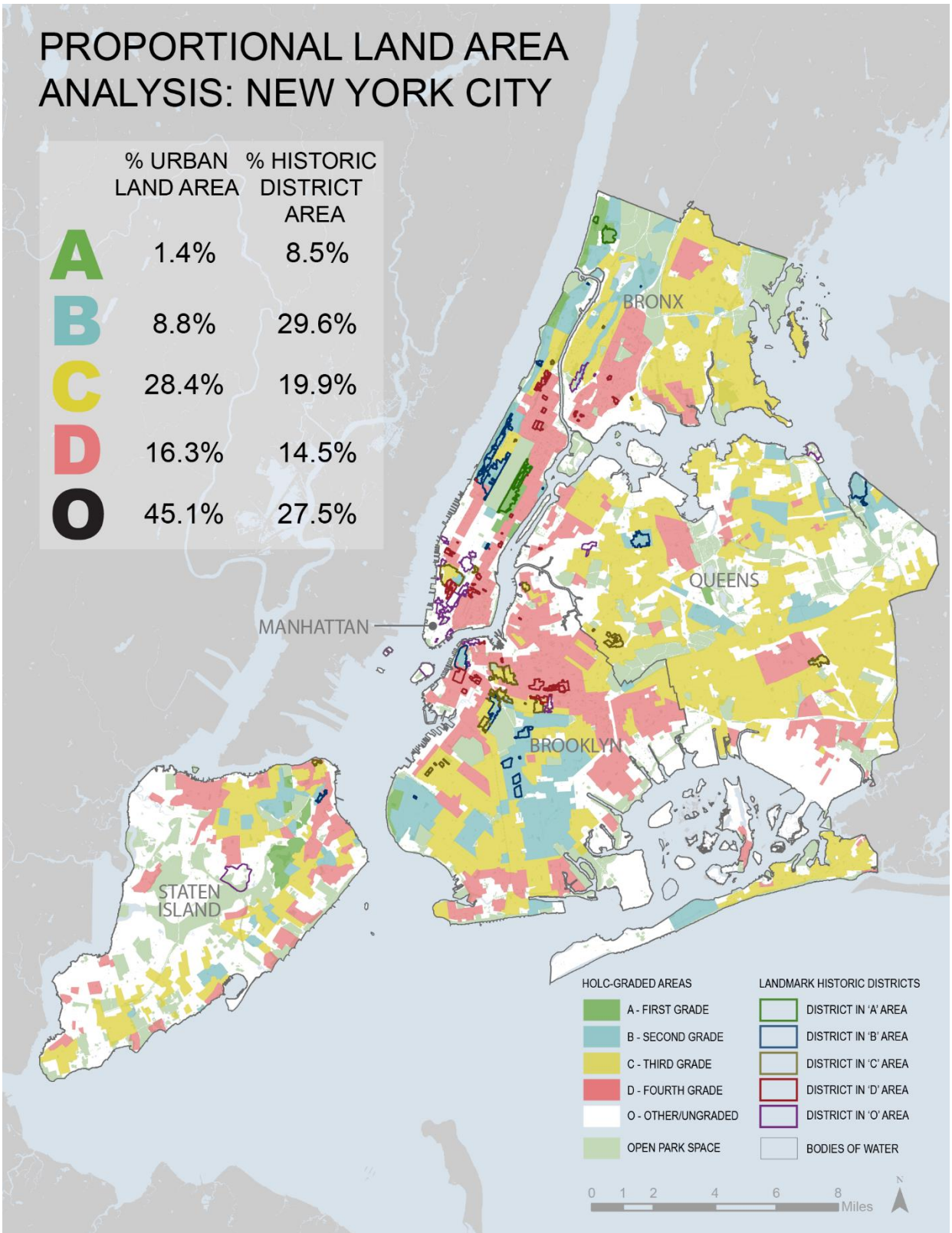

Figure 11 Proportional analysis of spatial relationship between designated historic districts and HOLC Mortgage Security grades areas in New York City in 2021. Map by author.

New York City

The dichotomy of representation in privileged versus disprivileged spaces was clear in New York at multiple levels. At the city level, historically privileged areas were over-represented by designation, while historically disprivileged areas were under-represented. The disparity translated to the borough level as well. It was magnified in Manhattan, the borough where the majority of designated land are in the city is found; 31.5% of borough's land area was redlined, but just over 15% of designated area is in redlined areas. In contrast, designations in historically redlined areas of the borough of Brooklyn are nearly proportional. Relatively few designations occurred in New York between 1980 and 2000, making it difficult to determine spatialized trends as designations have gained pace in the last twenty years. This is particularly true in Manhattan, where designations have been diffuse, and can be seen in the city as a whole, although in Brooklyn recent designations have predominantly been in historically disprivileged areas.

In the 1939 HOLC maps, nearly half of all land area in New York was in ungraded commercial and industrial areas, particularly around the waterfront. Only 10% of the city's area received the higher 'A' and 'B' HOLC grades; the remaining 45% received disfavored 'C' and 'D' grades. This does not correspond proportionally to the distribution of historic districts across all five boroughs. 40% of historic district area lies within the boundaries of those historically 'A' and 'B' graded areas and only 33% lies within 'C' and 'D' graded areas. That over-representation is greatest in historically 'B' graded areas, those that were on the rise or mature, with a differential of 21 percentage points. The under-representation of disprivileged areas is greatest in 'C' graded areas at just under 10 percentage points and less so, at 2% across the urban scale, in redlined areas (Foster 2020). From this initial spatial analysis, it is clear that historically privileged areas, and with them socially, economically, and politically privileged communities and their narratives are significantly more represented in New York preservation designations.

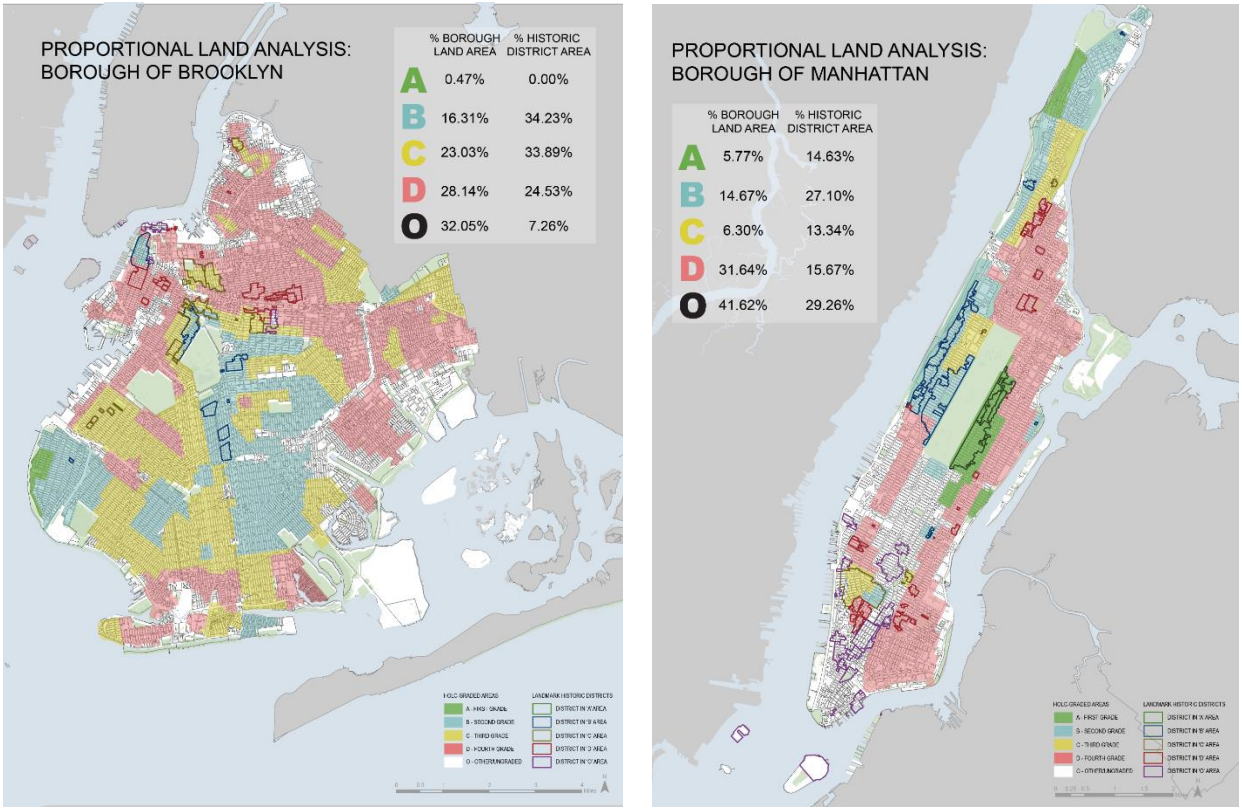

Figure 12 left and Figure 13 right Proportional analysis of spatial relationship between designated historic districts and HOLC Mortgage Security grades areas at the borough level: Brooklyn (left) and Manhattan (right) in New York City in 2021. (Foster, 2020)

Manhattan and Brooklyn were populous enough, as individual counties and semi-independent political entities, in 1940 to meet the threshold for case study and spatially they present very different stories of representation. Disparities in representation were the greatest in Manhattan, where 'A' and 'C' graded areas were over-represented by margins of nearly 10 percent while 'B' graded areas saw an over-representation of nearly 15 percent. Redlined areas are conversely under-represented by nearly 20 percent. To understand the magnitude of these differentials throughout the city, it is important to note that Manhattan has by far the largest percentage of its land area protected by preservation designation of any of the five boroughs. 2.4% of New York's total land area lies within historic districts, but in Manhattan that number rises to 12% of the borough land area. The next closest is Brooklyn, where just 3% of the land area is protected within a historic district. The greatest margins of disparity occur in the borough where the overwhelming majority of designated properties exist, magnifying the

impact of those disparities. Brooklyn, in contrast, saw greater parity in its representation. The over-representation of 'B' graded areas is even greater in Brooklyn, at nearly 20 percent, but 'C' graded areas are also over-represented by 10 percent. Redlined areas are nearly proportionally represented at 28% of the HOLC-graded land area and 24.5% of the land area designated within historic districts (Foster 2020).

Examining designations spatiotemporally at the city and borough levels did not elucidate any significant trends in designation in either privileged or disprivileged areas of the city. In general, the number of historic district designations has increased in the last two decades from a lull in the 1980s and 90s. The number of districts designated nearly doubled between these time periods, from 29 to 54. In Brooklyn that increase was four-fold, from five districts designated between 1980 and 1999 to twenty-one districts designated since 2000. The only consistent trend is an increasing number of district designations in historically 'C' graded areas across the city as a whole. That trend is reversed in Manhattan (Figure 16), but no other spatial patterns are clearly discernable in the designations in that borough. In Brooklyn, recent designations have predominantly been in historically disprivileged areas. Double the number of designations have occurred in those areas as designations in B-graded areas over the same two-decade period.

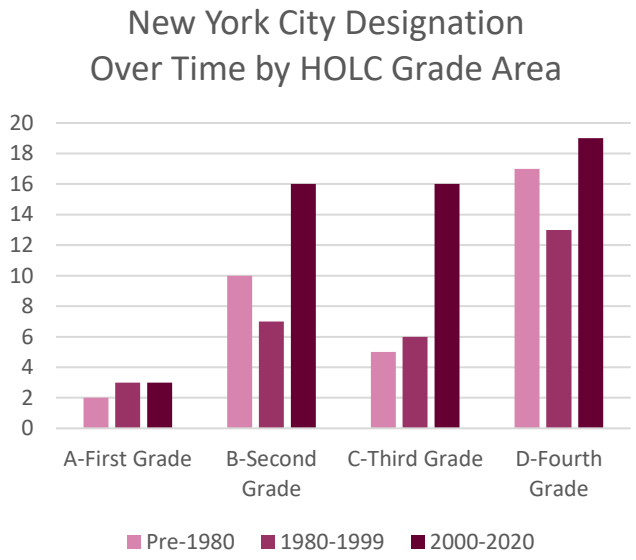

Figure 14 Spatialized analysis of historic district designations in New York City based on HOLC grade areas districts are located within. Based on current designations as of January 2021.

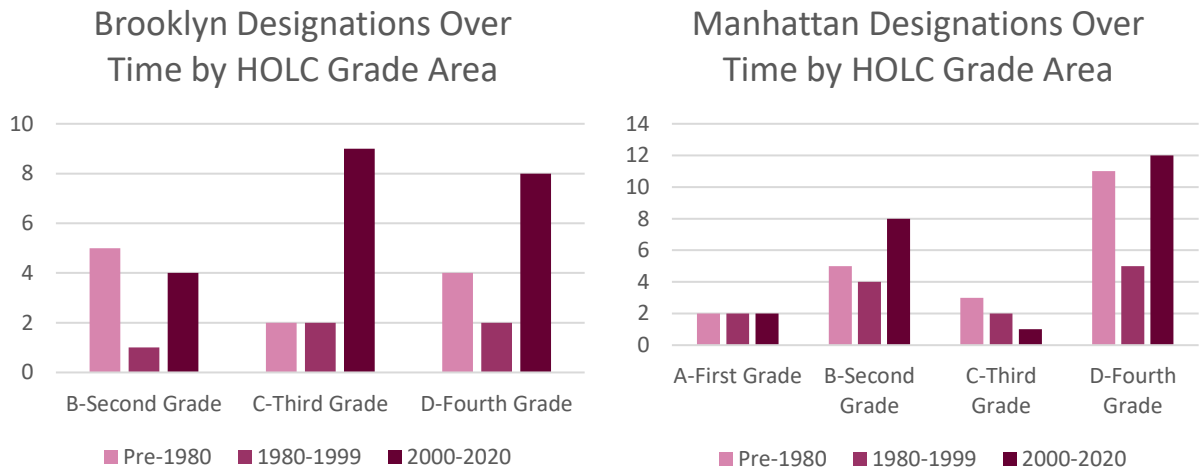

Figure 15 left and Figure 16 right Spatialized analysis of historic district designations at the borough level, including Brooklyn (left) and Manhattan (right) based on HOLC grade areas districts are located within. Based on current designations as of January 2021.

The lack of distinct trends in the spatialization of heritage designations indicates that while disparities in representation may not be increasing with time, they are also not decreasing. The socioeconomic implications of New York's current spatial distribution of historic districts and the impacts of disparity in representation will be discussed in a later chapter.

Understanding Representation through Spatialization

Spatializing historic district geographies within geographies of redlining was a means to evaluate the representation of disprivileged neighborhoods, and the historic narratives of the disadvantaged social groups that lived in those neighborhoods, in relationship to the representation of privileged neighborhoods and narratives. The data presented an initial indication of whether spatial equity is being achieved, or not, through existing designations. In half of the case study cities, that proportionality had been achieved; in the other half it had not. In each city there were unique factors impacting designations and the balance of representation: Boston's twenty-year lull in new designation, policy changes in Chicago that correlated to a spate of new designations, and new preservation tools like SurveyLA in Los

Angeles for which the long-term implications are yet unknown. The findings of the geospatial analysis point to the local nature of preservation and, therefore, the need for local-level analysis to be undertaken to understand how preservation designations are performing toward equity in any given city.

Examining designation trends was one means of querying shifts at the municipal level, in practice and policy, that lead to changes in the patterns of designation. In cities such as Chicago and Detroit, recent trends of increasing designations in historically disprivileged areas suggest that proportionality was achieved with some intentionality over time. In Chicago, this is at least correlated to an update in preservation policy; in Detroit, no such correlating event could be identified. SurveyLA was intended to encourage equity and comprehensiveness in heritage designation in Los Angeles, but designation trends since the use of that tool began favor historically privileged areas, which raises questions about how that tool is being used and what analysis is being done by its users to determine the effects of its use in the city and whether or not it is meeting its intended purpose.

The geospatial methodology created for this initial spatial analysis is a relatively low-barrier options for municipal agencies to use and better understand how representative designations in their municipality are of diverse historical narratives. Used on a periodic basis, it can provide quantifiable metrics on the impacts of newly instituted policies or newly initiated tools or be used pre-emptively as a planning tool for future preservation efforts, designations or otherwise. It also had the potential to be further developed to query larger questions about equity in preservation, such as the distributive effects of preservation on socioeconomic metrics over time. That question will be examined in the expanded analyses of Boston and New York, in the following chapters.

Chapter 5: Socioeconomic Effects of Preservation in Boston & Cambridge

The findings of the initial analysis speak to the relationship of preservation designations to historic privilege and disprivilege in the urban footprint. The basis of that historic privilege, in the case of redlining and its successor urban policies, was the social make-up of the communities that inhabited those spaces, namely race and ethnicity, and that privilege has well-studied, long-term socioeconomic impact. In Boston and Cambridge, the spatial analysis revealed a largely proportional spatial relationship between the existing historic districts and the HOLC-graded geographies they lie within. This chapter further examines social and economic factors in those cities, analyzing how they have changed from the period of redlining to the major designation period in the early 1980s and through to today. By spatializing those metrics, the socioeconomic shifts in designated areas over time were compared to their non-designated counterparts, and the relative performance of historic districts in historically disprivileged areas compared to those in other parts of the city were analyzed as well.

For redlined areas of Boston and Cambridge, social, rather than economic, factors were the main source of disparity between historic districts and non-districted areas over time. This was particularly true in historic districts which saw population density increase in the decades after designation while the racial diversity was rapidly replaced by a majority-white population. While redlined areas as a whole experienced shifts in metrics of unemployment, poverty rate, and median home value in similar proportions to other areas of the city, the differential of designation was significant. This chapter concludes with an examination of these trends in socioeconomic metrics within the South End Landmark District, considering how they relate to community concerns that propelled the initial designation and the social characteristics included in the designation as significant and character-defining for the District, as well as how socioeconomic changes over time may impact the District's future.

Demographics & Designation

Redlining targeted communities based on racial composition, predominantly Black communities, and ethnocultural composition, including majority-Jewish and immigrant communities. Examining HOLC area descriptions for redlined areas in Boston, the "infiltrating" populations were predominantly in the latter category – foreign-born residents from European and Eastern European countries. Seven of the twelve D graded areas indicated significant populations of Italian immigrants; the remaining areas indicated singular communities of Canadian, Irish, Lithuanian, and Syrian immigrants with only one racially mixed area. The description of the singular racially-mixed area was the only one that indicated a Black population greater than 5% at 25% of the population of that area (Nelson et al. 1939b). In contrast, the large, redlined area immediately across the river in Cambridge (Cambridge Area D1) was noted as having an 70% predominately Black population which was also infiltrating the smaller redlined waterfront area (Cambridge Area D2) previously home to Italian immigrants (Nelson et al. 1939c). Already, in 1939, the HOLC security grading process in the city limits of Boston encountered a city in which Black residents were already largely excluded.

The majority of immigrant populations found in Boston's redlined areas – Italian, Irish, Canadian, Lithuanian – were considered racially white by the U.S. Census. The greater socioeconomic mobility of white immigrants allowed them to prosper beyond socioeconomically poor beginnings, particularly in the post-war era, and to assimilate and be accepted by the socially dominant, racially white, class. With inculcation into the majority social group came access to the systemic benefits – and privileges – of whiteness over time (Yang and Koshy 2016). Conversely, systemic disinvestment and disenfranchisement are ongoing issues for many Black communities today (Aaronson 2017). The disparity in historic condition and historic opportunity must be acknowledged when comparing the benefits of

preservation for both social groups. This requires that the analysis does not treat these groups as monolithic, tied to their shared geography of historic disprivilege, but traces the decidedly different trajectories of privilege and opportunity over time through the social and cultural narratives tied to the physical environments.

Social Changes Over Time

A spatialized analysis of social markers for racial composition confirmed the narrative told by the HOLC area description sheets. In 1940, Boston and Cambridge's population was 97% white, and 3% non-white, with very little variation across the city. Future historic districts in redlined areas had the greatest diversity at only 87% white and 13% non-white.

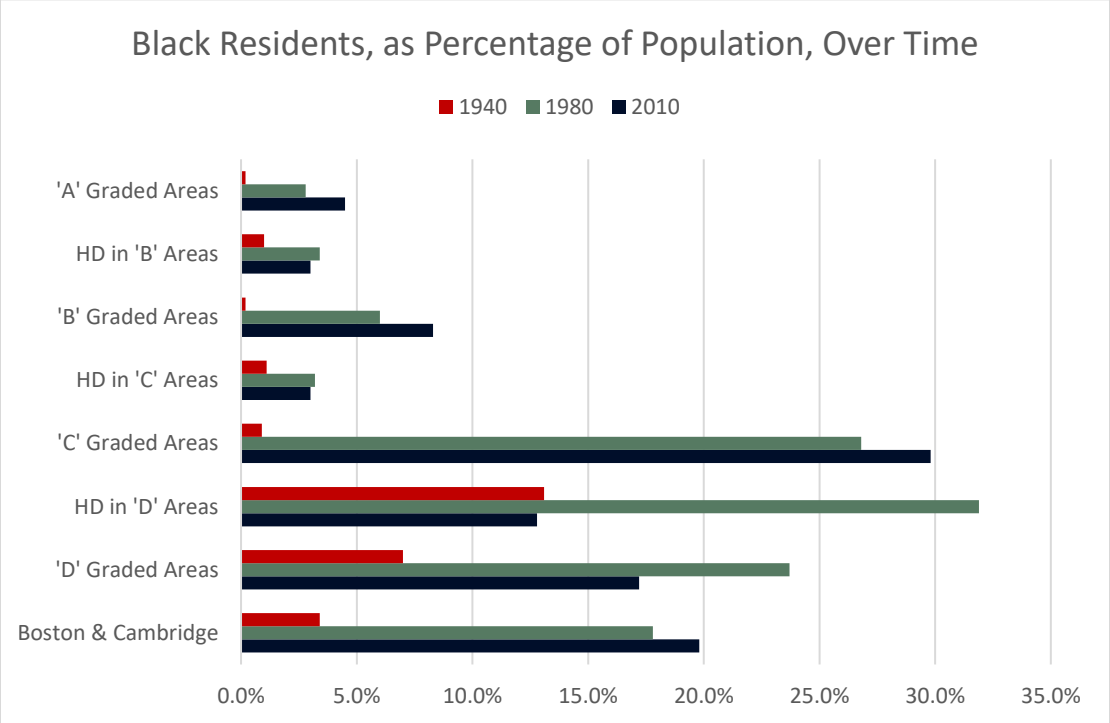

Figure 17 Changes in the percentage of population made up of Black residents over time for each HOLC grade area and historic district area in Boston & Cambridge visualize the loss of Black communities in redlined historic districts in the years after designation.

That make-up is largely the same today in historically privileged areas, where there has been a minimal in-migration of other, non-Black, residents. In contrast, as shown in Figure 17, redlined areas saw an increase in diversity between 1940 and 1980, with the white population falling in redlined areas, and especially in redlined future historic district areas. Black populations grew to 24% and 32% of the population, respectively, with the balance of the population being of other non-white racial groups. Between 1980 and 2010, that trend of diversity reversed itself, particularly in designated historic districts where the white contingent grew to 64% of the population while the Black contingent fell back to 1940 levels. The disparity in racial change between historic districts and larger grade areas is even more notable in historically 'C' graded neighborhoods which are racially mixed with no majority groups, compared to 84% white and 3% black populations in historic districts within 'C' graded areas. Together this data tells a story of increasing community diversity after redlining that effectively halted, or in some cases, reversed itself after designation in the 1980s (based on 1980 census data); the result today is historic districts with significantly whiter, more racially homogenous communities than their surrounding neighborhoods.

A spatialized analysis of population density found that for much of Boston and Cambridge – all except redlined areas and historic districts in 'C' and 'D' grade areas – population density has been relatively consistent, +/- 6 occupants per acre, since 1940. Historic districts in historically 'C' graded areas have seen continuous growth in population density in consecutive census, but 'D' graded areas, both in an out of historic districts, saw significant drops in density between 1940 and 1980, 50% and nearly 40% respectively. The initial drop in density fits historically with trends of suburbanization and post-war mobility for certain social classes happening in the same period as redlining. Those areas had minor increases in density in the 2010 census but remain well below 1940 levels, and it remains unknown if the preservation of the historic built environment will continue to impact changes in the population in the future.

The spatialized analysis of median home values found that since the 1980s period of designations, the average median home value in historic districts has risen to 150%-180% of the average median home values of the encompassing HOLC-grade areas. Despite property value increases of anywhere from 900% to nearly 2000% across the city between 1980-2010, the differential between historic districts and their surroundings have held steady. In that same time period, there was a leveling across the city, with historically 'C' and 'D' graded areas, largely located in the central city, experiencing significantly steeper increases in property values to bring them in line with the values of historically privileged urban areas. Other socioeconomic markers, including resident unemployment and poverty rates, showed a similar leveling out in those three decades, with redlined areas historically associated with higher poverty coming in line with city-wide averages and trends. The socioeconomic markers would indicate positive trends across Boston and Cambridge, particularly in historically disprivileged areas; however, the social metrics simultaneously indicates changing populations in those area to suggest that the cause of these trends may not be the improvement of conditions of long-time populations. This suggestion, and the trajectory of socioeconomic changes in the city, was investigated further in the South End Landmark District.

South End Landmark District

The South End Landmark District is the largest historic district in either Boston or Cambridge and is surrounded on three sides by smaller, related designation areas: an architectural conservation area and historic area to the north and west and an associated protection area to the east. It covers the majority of the redlined area designated as D7 in the HOLC mortgage security maps, an area noted for its on-going infiltration of "foreign" residents, predominantly Syrian in 1939. A Black population making up 5% of the residents is noted in the area description. The redlined area immediately to the south was noted for its more integrated population.

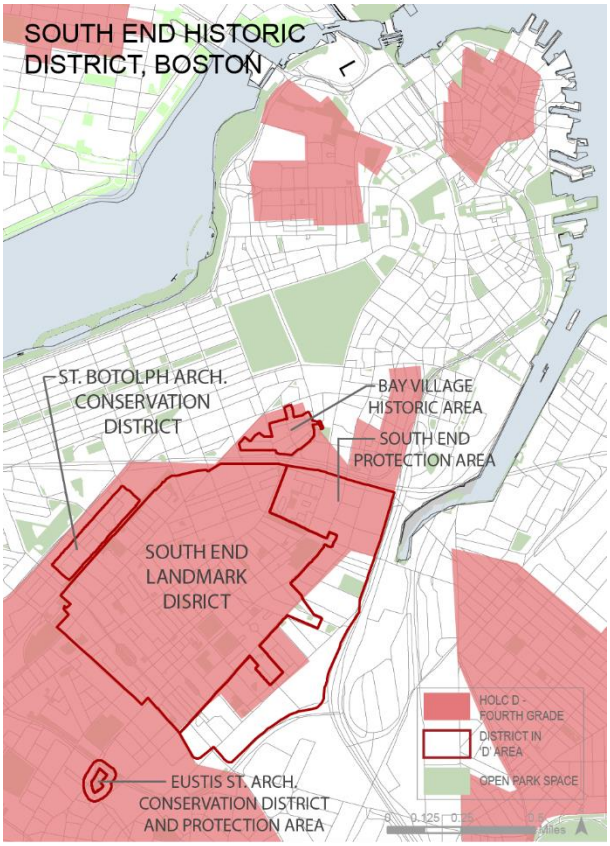

Figure 18 Map of the South End Landmark District in Boston and the surrounding designated areas, which include every district designation type enabled in the municipal preservation policy. Map by author.

The South End was designated as a landmark historic district in 1983, but the preservation effort for the area began two decades earlier in response to an urban renewal plan that would have destroyed much of the neighborhood. Community action led to the restructuring of the South End Renewal Project to undertake rehabilitation of historic building stock the community recognized as both sound and aesthetically desirable, rather than the wholesale demolition that had happened in other areas of Boston, and to develop new properties more compatible with the architectural styles of the area. The project was authorized in 1965 and the rehabilitation of existing building stock and preservation of the architectural character and scale of the neighborhood accomplished while the area was under the authority of the Renewal

Project's administrators was considered very successful. The 1983 designation was, in fact, a reaction to the anticipated removal of the urban renewal area designation in the South End and the potential threat of private development subject only to standard zoning and code review, rather than the multi-agency review required under the purview of urban renewal. The Study Commission tasked with creating the designation report for the area saw landmark designation, and the mechanisms of review it put in place, as a means to maintain community input in the future development of the South End (Boston Landmarks Commission (BLC) 1983). This was based on particular features of preservation policy in Boston and Cambridge wherein administration of the landmark district after designation, including design review and other codified responsibilities, are the responsibility of local Historic District Commissions. By law, those Commissions must include two residents of the historic district, alongside three members of the Boston Landmarks Commission. Standards & criteria governing each district are also unique to the district, presenting an opportunity to tailor the scope of preservation regulation to the unique character of the district (Massachusetts Acts of 1975).

The designation Study Report prioritized the architectural significance of the South End – "the largest essentially intact Victorian row house neighborhood in the nation"– as the reason for designation, but also included "recognition of its social significance as one of the most racially, ethnically, and economically integrate communities of its size in the nation…[having been] racially integrated for more than one hundred years and… [with] more than forty different ethnic groups represented" (BLC 1983) as cause for designation as a historic landmark district. It tied the cultural significance of the area as home to generations of new immigrants to America from a multitude of countries and to a consistent Black population that made the neighborhood unique for its integration and diversity, and described an environment where identification was more ethnic than racial: "It was not Black and White, but Greek, Syrian, Irish, Black, Armenian, Lebanese, Chinese, Jewish, Lithuanian, and so on." (BLC 1983) Although contemporary understandings of racial and ethnic relations in early 20th century

America may cast some doubt on the optimistic description of the integration created in the Study Report, it is clear that the preservationists and community members involved in the designation of the area saw its diversity of residents as a defining characteristic of the area, supported and strengthened by the built environment, and equally important as a historic value worthy of preservation recognition.

The Study Report also acknowledged the impact of redlining and subsequent urban renewal both implicitly and explicitly. The mobility of the communities living in this area were not equal, and the Report's description of post-war out-migration of many immigrant communities, ascribed to the country-wide push toward suburbanization, implicitly acknowledged the privilege immigrant groups had over their Black neighbors after redlining made it difficult to become land owners within their own neighborhood. Similarly, the description of an influx of Black residents to the South End in the years after redlining, when other neighborhoods with Black communities were demolished or diminished in urban renewal clearance efforts, explained how the Black population grew to be "the most stable neighborhood in the South End" (BLC 1983). An examination of the future planning pressures on the neighborhood acknowledged the redlining explicitly, lauding the changes the urban renewal plan had facilitated in a neighborhood that was redlined by financial and insurance institution as recently as the 1970s. It went on to raise on of the questions related to equity that preservationists are still facing today: displacement. The report acknowledged that there had already been displacement of long-term residents during the rehabilitation and construction of subsidized units in the area, and recognized that longer-term displacement of residents would likely occur as new development and the current trend of condominium conversions continued. The inclusion of these concerns in the Study Report for designation suggests that those involved in the effort hoped that designation would help mitigate these issues as part of preserving the community. Spatialized census data allows an analysis of correlations between

those goals of preservation and actual changes in the area's population before and after designation.

An analysis of 1940 census data shows that the population within the historic district area was 15% Black and only one-third foreign-born. The majority of residents, then, were ethnic whites and, likely, early generation American citizens, which is in keeping with designation narrative of a community in transition where new immigrants stayed for a few generations before moving on. At the time of designation, the Black community had increased to one-third of the area's population while the white population had fallen from a majority 85% to only 48% of the population. In the same time period, those categorized as racially "other" in the census, which included Asian Americans, LatinX, and other non-white communities was now nearly 20% of the population in South End. Foreign-born residents, related to the immigrant narrative of the area, were 18% of the population when the area was designated. This too is in keeping with the picture of diversity the Study Report praised as worth of preservation, and of the population changes it noted as the result of urban renewal in Boston.

Three decades after designation, the concerns raised by the Study Report around maintaining diversity and displacement of current residents appear to have been warranted – and also unmitigated through the mechanism of designation. The population in the South End in 2010 had increased to 67% white, which had directly correlated to population loses in the Black community, which fell to 13% of the population in 2010. Other racial groups maintained 20% of the population, as did foreign-born residents. This indicates that while the South End may have succeeded in maintaining ethnic diversity and the immigrant communities central to its historic social narratives, it has failed to maintain the racial diversity that the area historically claimed and is instead moving towards a racially homogenous future.

The South End Landmark District is representative of the larger trends occurring in Boston and Cambridge, where isolated racial diversity achieved in the 1980s has decreased in the decades

since designation, in some cases falling to pre-1940 levels. Increasing property values, particularly in landmark historic districts, and improvements in other socioeconomic markers are for the benefit of new and changing populations. It also highlights the limitations of preservation designation to impact social outcomes, even when cultural heritage is considered of equal value to architectural heritage at designation and tied to specific historically-present communities. Preservation policy in both Boston and Cambridge notes the purpose of preservation of historic resources as to "protect the beauty" of the city and create a "desirable and attractive" urban environment which attracts people to live and work there (Massachusetts Acts of 1975; City of Cambridge 2020). The focus on preserving the formal qualities of the built environment as the stated purpose of preservation translates into the mechanisms enabled in the policy to protect the built environment. These are well-codified in policy and in practice, and in the case of the South End Landmark District they have been largely successful in maintaining the physical integrity of the area. No similar mechanisms exist to protect the communities that are representative of a district's heritage and that can result in the loss of human-centered aspects of cultural heritage, as the data suggests is happening in the South End.

Chapter 6: Socioeconomic Effects of Preservation in New York City

Spatially, New York presented a more complex picture of representation through preservation designations than Boston and Cambridge. Overall, historic district designations were more present in historically privileged areas; in Manhattan, the borough of the city with the greatest rate of designation, that disparity was magnified. This chapter examines the relationship of those spatial boundaries to socioeconomic factors across time, starting again in 1940, the year after the HOLC Mortgage Security Maps were issued for New York City, and including 1970, a major designation period, particularly in redlined areas, and 2010, which is representative of both contemporary conditions and the closest decennial census to another wave of designations – and designation extensions – in redlined areas. This allows an understanding of socioeconomic changes in historic districts before and after designation as well as trends of socioeconomic differences between designated and non-designated areas over time.

The geospatial analysis identifies notable differences in both social and economic factors in designated and non-designated areas over time. Less density and majority white populations, as well as lower unemployment and poverty rates, in historically privileged areas speak to both racial and class segregation in the city over the last eighty years. Historic districts have greater population density and significantly whiter populations than their non-designated counterparts. Improved unemployment and poverty rates in historic districts also correlate residing in designated areas to improved economic conditions. These metrics will be explored further in the next sections, followed by an analysis of two historic districts initially designated in the early 1970s with significant extensions in the early 2010s: Mount Morris Historic District and Extension in Manhattan and Bedford-Stuyvesant/Expanded Stuyvesant Heights Historic District in Brooklyn.

Social Changes Over Time

Unlike Boston, New York did not have a predominance of one institutionally disfavored community living in redlined areas; instead, there were large areas with predominantly Black, Jewish, and immigrant communities across the five boroughs with smaller areas of overlap and integration. As previously discussed, census data views the latter cultural and religious groups as racially white, represented in the 94% white population of New York City in 1940. The only significant deviation from that ratio in 1940 was in redlined areas, and future historic districts in redlined areas were the most diverse – 63% white and 37% non-white racial groups. In other HOLC grade areas, there was near parity in population make-up between areas that would later be designated and those that would not.

Redlined areas that would later be designated also had the greatest population density in 1940 of any future historic district or HOLC grade areas, nearly twice the population density of the surrounding redlined areas – 134 vs 79 occupants per acre. This was a less notable difference than historic districts in other HOLC grade areas, where the population density in historic districts was typically 250% as dense as the surrounding grade area. Historic district designations in New York City tend toward an assessment of neighborhoods as they existed in their period of development, often ending in the first half of the 20th century, when establishing special architectural and historical character. Given the racial demographics and population density across the city in 1940, it is clear that historic district designations in redlined areas are better able to represent historically racially diverse neighborhoods and districts of the city.

Between 1940 and the 1970 designation wave, population density increased or remained stable in all future designated area and HOLC-grade areas, with the exception of future historic districts in 'A' graded areas, where population density dropped by 10% (Figure 19). Racial make-up of 'A' graded areas did not change, while 'B' graded areas gained small numbers of Black residents. Disprivileged 'C' and 'D' graded areas saw the most significant changes in

racial make-up. 'C' graded areas became 80% white/15% black; areas which would later be designated became even more diverse at 68% white/28% black. Similarly large shifts occurred in redlined areas, where white populations fell below 60% while black populations rose to 35%; in future historic district areas it was 43% white/53% black. These demographic shifts are in keeping with the historic migration of white communities out of underprivileged urban areas in the 1940s and 50s through suburbanization efforts and the influx of black residents from the south and elsewhere into extant urban black communities over the same thirty year period. The lack of significant demographic shifts in privileged urban areas is also in keeping with the known historic impacts of redlining and subsequent policies – namely urban racial and economic segregation.

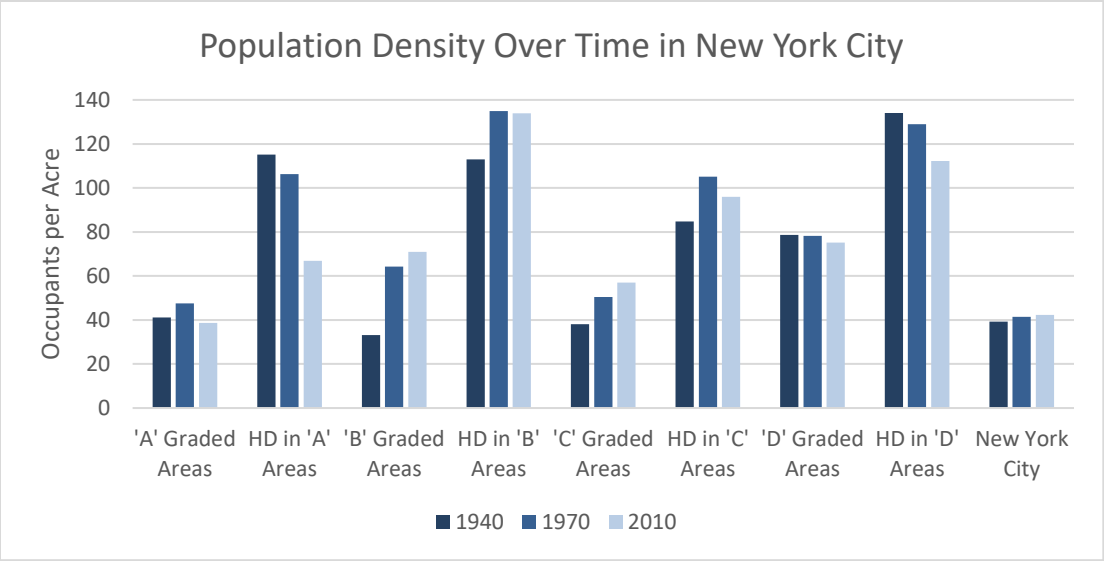

Figure 19 Population density of urban areas in New York City in 1940, 1970, and 2010 shows changes between redlining and designation and between designation and present day

The figure above shows the changes in population density in the various geographies between each of the temporal milestones. In the period between 1970, the designation of the first set of historic districts within redlined areas, and 2010, the most contemporary census data, population density fell in all historic district areas with the exception of 'B' graded areas. The degree of fall varied from 15% in redlined areas to nearly 40% in privileged, A-graded areas.

In the same forty year period, the proportion of black residents fell dramatically in historic 'C' and 'D' graded areas, by 8 and nearly 20 percentage points, respectively, as shown in the figure below. In designated historically redlined areas, that drop in the black population was made up for in an increase in white residents – 43% to 51% of the population - and in other non-white racial groups – 2% to 15%. While the latter increase can be partially explained by the introduction of ethnoracial groups to the census demographic selection options, as well as Latin migration in the 1980s and 90s, it cannot explain the loss of Black residents. In contrast, non-designated historically redlined areas experienced a decrease in the white population over the same time period – from 60% to 41% - which was almost wholly accounted for in the increase of other non-white communities, which increased from 2% to 27% of the population. The Black population in those area fell only 3% – again compared to 20% in designated historic districts – in that forty year span.

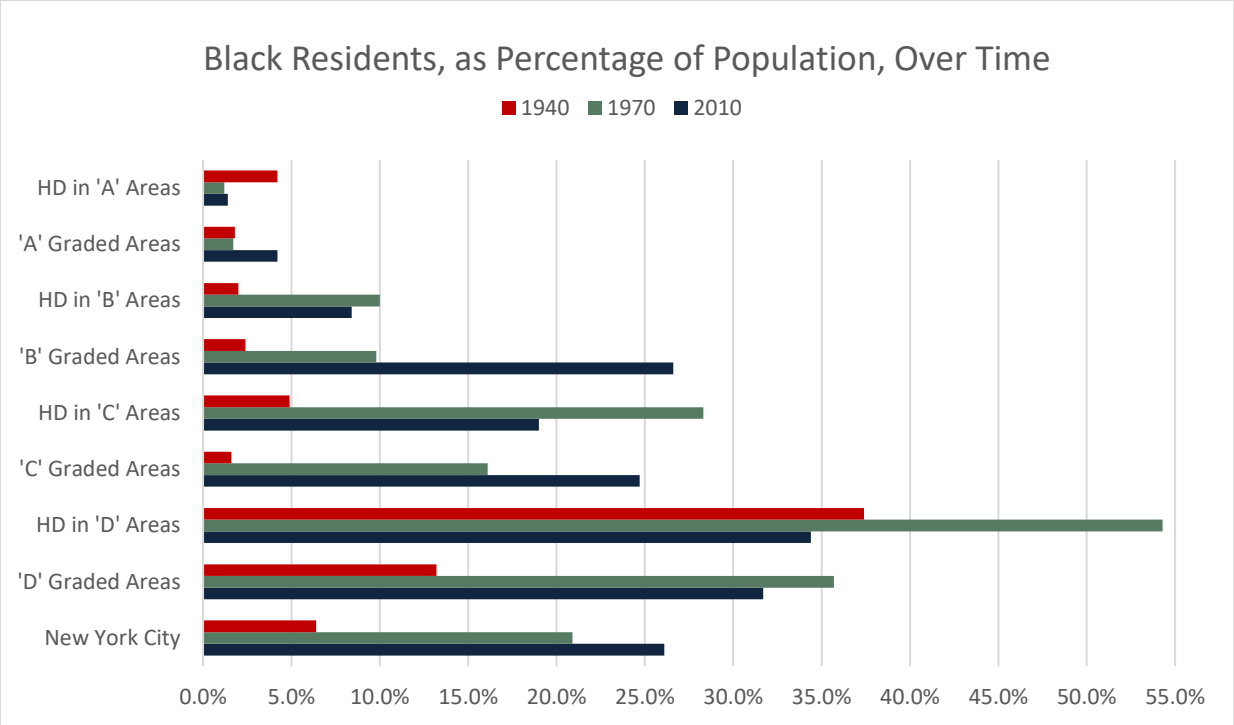

Figure 20 Percentage of the New York City population composed of Black residents within HOLC grade areas and historic district areas over time

The loss of Black population from historic district areas also occurs in 'C' graded areas, although not as dramatically; it fell from 27% in 1970 to 19%. At the same time, the white

population remained the same and the decrease in black residents was balanced by an increase in other non-white residents. Outside of historic districts in those 'C' graded areas, the black population rose in an almost inverse relationship, from 16% in 1970 to 25% in 1970. In historically privileged areas, there was minimal change in the percentage of black residents in historic districts and only slight increases outside of historic district boundaries. The most significant demographic shifts were between white and other non-white racial populations. Only historic districts in 'A' graded areas have maintained their homogenously white population from 1940 to today. In this case, the data supports what some communities fear in historic preservation designation, a trend indicating a loss of racial diversity and urban density in designated areas, particularly in historically redlined and minority-centered communities. These changes also necessarily put pressure on surrounding neighborhoods, both to absorb community members displaced as density is lost and to retain and maintain cultural practices and heritage as long-time balances of diversity are shifting.

The shift of social demographics in this seventy year period highlights the historic and contemporary racial segregation in the city's most privileged areas, particularly within the boundaries of historic districts in those areas. It also quantitatively describes the changes that concern many communities when district designations occur, namely the loss of racial and cultural diversity that happens in parallel to the displacement of residents and the change of community amenities that can follow those. These trends are not visible at the urban scale, and therefore not noted when the city is taken as a uniform singular case study, as evidenced by the various preservation reports published by preservation organizations in recent years (PlaceEconomics 2016; Gould Ellen et al. 2016). By spatializing that same data along boundaries of areas of historic privilege and disprivilege, the disparity becomes clear.

Economic Changes Over Time

Three economic metrics were spatialized and examined for historic district and HOLC grade areas over time: unemployment rate, poverty rate, and average median home value. Unemployment rate was the only metric for which there was spatialized data available for all three query periods. Given the proximity to the Great Depression, 1940s unemployment rates were markedly higher than later years and were highest in redlined areas, more moderate in 'B' and 'C' graded areas, and lowest in 'A' graded areas. Future historic districts in 'A' graded areas had a lower unemployment rate still – 7% compared to 10% in the wider 'A' grade areas – almost 1/3 of the 19% unemployment rate in redlined areas. By 1970 the range of unemployment rates had narrowed to 2.3%, from 2.9% in historic districts within 'A' graded areas to 5.2% in historically redlined areas. Historic district areas had equal (+/-0.15%) or slightly higher (+/-0.94%) unemployment rates than their encompassing areas. Forty years later, that had reversed; historic districts had lower unemployment rates than their encompassing HOLC grade areas across the board. HOLC areas had similar rates of unemployment in 'B' through 'D' graded areas – between 4.06% and 4.37% - but the differential in historic district areas was highest in 'B' and 'D' graded areas, 1.48% and 1.13% respectively.

The proportion of area residents living below the poverty level was used as a measure of longer term trends of income and employment. Again, redlined areas had the highest poverty rate of any historic district or HOLC grade areas in both 1970 and 2010. Their 2010 poverty rates were three times that of 'A' grade areas, including both designated and non-designated sections, and 1.25 to 1.5 times the poverty rate in other grade areas. Redlined areas also saw less of a decrease in poverty rate between 1970 and 2010 compared to other areas in the city, again in both designated and non-designated areas. In redlined historic district areas, the poverty rate fell by 50%, compared to 60%-65% reductions in other areas. In non-designated redlined areas, the

reduction was even less, 35%, compared to 45% - 55% in other non-designated areas. Spatializing this socioeconomic and temporal analysis provides quantitative confirmation of the economic detriment of redlining and the historic and contemporary disparity its boundaries create. In this light, given the superior economic metrics in the designated districts of redlined areas, it could be argued that preservation designation is aiding in ameliorating those disparities. When taken with the findings of the social metrics, however, it raises the question of whether preservation is actually having positive socioeconomic impacts for residents during and after designation or whether changing residents are bringing with them different economic statuses. If it is the latter, will these economic shifts simply build on the social changes in creating pressures of change in larger neighborhoods? If so, the implications of this on frameworks of equity in preservation must also be analyzed and understood.

Average median home value is used to understand the positive property value implications of historic districts. Inconsistency in how this metric was collected historically, partnered with rampant inflation ranging in the thousands of percent for home values between 1970 and 2010 (and the tens of thousands percentage points between 1940 and 2010) led to only 2010 data being spatialized for analysis. As expected, based on previous research, historic district areas had notably higher average median values than their encompassing HOLC grade areas. This "designation value increase" in landmark district areas was greatest in historically privileged areas where average median value is 177% higher than encompassing areas whereas in redlined areas average median value is only 132% higher than neighboring areas. While this warrants further quantitative review over a longer time frame in the future, this contemporary data indicates that historically disprivileged areas may not benefit equally from the economic benefits claimed for preservation.

Mount Morris Historic District & Extension

Mount Morris is a largely residential area that developed in the decades just before the turn of the century. Located in Central Harlem, its significant character is in the remarkably congruous composition of its masonry rowhouse streetscapes built in the period's predominant styles, including examples of exceptional architectural detailing. Socially, Mount Morris developed as a middle-class neighborhood of white families, often European immigrants, and then later Jewish immigrants. Despite Harlem's demographics swinging to an increasing Black-majority neighborhood in the 1910s and 20s, Mount Morris remained a white community until the Great Depression. Since the 1930s it has been a Black neighborhood within the larger community of Harlem, the historic heart of Black culture and social life in New York City (LPC 1971a; LPC 2015). This is reflected in the HOLC area description for D23, the HOLC mortgage security grade area within which the extended historic district is located. The description notes the Black population as greater than 65% of the residents with some percentage of Puerto Rican immigrants as well. It described the neighborhood in terms similar to the 1971 designation report: "Formerly a good residential area largely one-family dwellings. Now almost entirely negro-tenements and converted dwellings into rooming houses." (Nelson et al. 1939)

The Mount Morris Historic District was first designated in 1971 and later expanded in 2015. Within the designation reports for the initial and expanded districts there is a notable shift in focus, from purely architectural significance to a balance of architectural and social significance. In the 1971 designation report the Landmarks Preservation Commission's findings of significance were based on the district's buildings which the Commission felt had "a special character and special historical and aesthetic interest and value and which represent one or more periods or styles of architecture typical of one or more eras in the history of New York City and which cause this area… to constitute a distinct section of the City" (LPC 1971a). The designation went on to describe the residential character of the neighborhood, its architectural

diversity, its proximity to the Mount Morris Park, and the religious architecture supporting its communities as character-defining features of the district (LPC, 1971a). Nearly fifty years later the LPC extended the historic district – to more than double the acreage within the district boundary – and the designation of the Morris Park Historic District Extension acknowledged both the architectural and social history of the neighborhood. The designation explicitly listed the social groups that had lived in the row houses characteristic of the neighborhood since its primary period of development and noted specifically that the area remained "one of New York City's most vibrant African-American communities" (LPC 2015). Together with the high quality of architecture, the community contributed to the character and sense of place that made the larger, extended district worthy of designation. (LPC 2015) While the 1971 report did mention the communities that had inhabited the district in the history review section, it was not included in the text of the designation. The designation is what is used in LPC review of proposed work, demolition, and development within historic districts, so the inclusion of social characteristics in that text is an important development in the values associated with designation in New York.

Mount Morris Historic District has a unique relationship to urban renewal, like the South End Landmark District in Boston, outside of the common oppositional narrative between urban renewal and historic preservation. The Mount Morris Historic District was proposed, in 1966, as part of Milbank-Frawley Urban Renewal development plan put forward by the Housing and Development Administration. LPC agreed to act on the designation only after the development plan was accepted, noting that if the plan was rejected the Commission reserved the right to act independently when making a determination on the designation of the district, implying that the urban renewal plan was driving the designation of this particular district. The Plan was approved in the spring of 1970 and LPC designated the district in 1971. Despite the connection between Mount Morris and urban renewal being an explicit and predominating part of the 1971 designation report, neither urban renewal, nor any impact it had on the built environment of

the original district, is mentioned in the 2015 extension designation report. The report is thorough in its description of the historic racism of the populace, including organizing by white residents to try and prevent early black residents from moving into the neighborhood in the early 20th century and their efforts to introduce racial covenants in Harlem, and the transition of the neighborhood to a Black- majority population during the Depression, but it does not include any instances of institutional racism or discriminatory policies, whether redlining, razing, or urban renewal. While this may not impact the designation itself, it is an example of how preservation agencies are not placing their work within complete longitudinal urban histories when evaluating areas for designation. That contextualization of the use of preservation tools like designation is an important aspect of assessing – and improving – equitable social and spatial outcomes in preservation.

The Mount Morris Extended Historic District designation report describes the district in 2015 as remaining the black enclave it had been since the mid-1950s but integrating some new communities (LPC 2015). However, analyzing sociospatial data from the original designation (1970 census data) and the latest census does not support that narrative. It shows instead that the Black population in Mount Morris has steeply declined over the last nearly five decades. The Black population has fallen from a super-majority, 99% of the population in 1970, to only 64% of the population in 2010; since 1940, the Black population lost nearly 3/4 of its residents. Over the same time, the white population has been rapidly increasing, from just over 1% of the population in 1970 to nearly 25% in 2010; other populations have seen a more gradual increase in number of residents, from less than 0.1% in 1970 to 12% in 2010. While the Black community in Mount Morris remains far more concentrated than at the borough level, where only 16% of residents are Black, the trend of community loss is a concern, along with its impact on the cultural heritage of Harlem. The population density of Mount Morris has also been declining since the 1940s and has continued to decline since its designation. This loss of

population contributes to, but does not fully account for, the changing racial make-up of the residents.

Economically, the Mount Morris Historic District trends better than the surrounding neighborhood and has matched the trajectory of the borough since its designation. Unemployment within the historic district is half the surrounding area and less than half the borough average; the poverty rate amongst residents is also lower than the surrounding neighborhood and the borough by margins of 3 to 5 percentage points. Average median home values within the historic district are 108% of those in the surrounding area (D23) and nearly 125% of the borough average. Despite the economic challenges the district designation report identified as plaguing the area from the 1930s through the 1980s, today the area within the historic district boundary is thriving economically, but those economic gains are contemporaneous with a shifting population away from the communities that contributed to the social and cultural character of the neighborhood. This data cannot dispel the questions of who is represented and who benefits any more than the data concerning the city at large can and it again highlights that regardless of whether preservation acknowledges specifical cultural communities in its historical narratives and designation activities, preservation designation does not impact the sustainability and resilience of those communities, only of the built spaces that they inhabit. This understanding will be tested again in the borough of Brooklyn, the other major population center of New York City in 1940, with an analysis of the Bedford-Stuyvesant Historic District.

Bedford-Stuyvesant & Expanded Stuyvesant Heights Historic District

Bedford-Stuyvesant, known colloquially as Bed-Stuy, is a predominantly residential neighborhood in central Brooklyn. Architecturally, it developed around the turn of the 20th century largely through speculative development. Rows of brownstones in a variety of styles, unified by the ironwork that lined the properties, created a tree-lined streetscape that was home to middle-class families and grew in population as more transportation options between Brooklyn and Manhattan reached the area. Beginning in the 1920s and accelerating through the 1930s, the area attracted Black African-American and Caribbean residents who saw an opportunity for homeownership, less density, and a cleaner environment. (LPC 1971b; 2013) Those communities remain the majority of Bed-Stuy's residents today.

A portion of Bed-Stuy was designated in the Stuyvesant Heights Historic District in 1971. The designation was put forward over concerns about irreverent additions and facade changes being made by property owners. Similar to Mount Morris, the designation of the 1971 district focused exclusively on the "special character and special historical and aesthetic interest and value" of the built resources within the district, which it deemed sufficiently unique to "constitute a distinct section of the City" (LPC 1971b). In particular, it noted the tree-lined streets, uniform roof lines and architectural details, including the many notable churches, as defining the unique character of the streetscape. In 2013 the Bedford-Stuyvesant / Expanded Stuyvesant Heights Historic District was designated, nearly tripling the land area within the district's boundary. Just as in Mount Morris, the later designation expanded its list of the qualities making the larger area worthy of designation to include the area's social and cultural history. So along with the "extraordinary urban streetscapes" the designation noted the district's position in the larger neighborhood and its century-long history as "one of the nation's largest and best-known African American and Caribbean American residential communities" whose cultural history was tied to the significance of the residential and ecclesiastical

architecture in the district (LPC 2013). The inclusion of the social significance of the Black communities historically and currently living in the larger historic district effectively expanded the historic narrative of Bedford-Stuyvesant beyond the period of development in the late 19th and early 20th century to include the history of the community through the present day, or at least the early 1980s, maintaining the thirty year buffer the City's preservation law requires.

Within that longer time frame of history are the majority of urban policies that disprivileged and discriminated against the significant communities of Bed-Stuy. The 1971 designation report describes in some detail the practice of blockbusting, when people purchase homes at low prices, often from white sellers, and sell them at significantly higher prices and with predatory mortgages to Black buyers, in Bed-Stuy between 1930 and 1950. The 2013 Bedford-Stuyvesant Designation Report, the only one analyzed to explicitly mention redlining, includes only a single sentence to describe the urban practices of the mid-to-late 20th century in Bed-Stuy, Brooklyn, and other areas of the city. As with the Mount Morris designation reports, the discriminatory and predatory practices of private market professionals are included without a corresponding discussion of the actions of government policies and institutions (LPC 1971b). These policies had implications on the social and architectural resources of these districts, making their omission in designation reports notable, but also pointing to a view of preservation as an independent actor on the urban environment which permeates both the agency actions studied in this thesis and much of current preservation research.

Bedford-Stuyvesant is another example of a community that came to inhabit an important historical role in the Black cultural landscape of New York City and displayed resilience in the face of economic and institutional disprivilege. Examining sociospatial data for the historic district, neighborhood and borough, shows that the area within the expanded Bedford-Stuyvesant/Stuyvesant Heights historic district was already far more integrated in 1940, at 58% white and 42% Black, than either the neighborhood of Bed-Stuy, which was 70% white, or the

borough, which was 96% white. By the time of designation, the historic district area was almost exclusively a Black community, at 96.5% of the population; the neighborhood was also majority Black but remained slightly more diverse in racial make-up. Since the original designation, the population of the historic district has shifted across all races. The Black population has fallen from 96.5% to 85%, while the white population has more than doubled to 9% of the population and other racial groups now make up 6% of residents. In Bed-Stuy, the white population has remained the same, while the Black population has fallen at a lesser rate to 78% and other racial groups have grown to 11.5% of the population. While this decline is not as severe as the one seen in the Mount Morris Historic District after designation, it still represents a trend of out-migration of the historically significant community. Populations density within the historic district was also falling over this time period, as was the population density of Bed-Stuy as a whole only at a slower rate than within the historic district area, which magnifies the population loss. These shifts occurred over a period of time when the Black population in the borough of Brooklyn was growing, from 25% of the population in 1970 to 35% in 2010, and the population density of the borough remained constant, meaning that new Black residents are not moving to the historic center of Black social life of Brooklyn. Shifting population centers over time have the potential to impact social and cultural heritage, whether people, traditions, or institutions, as well.

Historic District Designation in New York City

Analyzing these historic districts qualitatively, based on their designation reports, and quantitatively using sociospatial metrics of demographic and economic conditions highlights several things about how narratives are represented in designation and how they are represented in the districts themselves, and the ways in which geospatial analysis can support or challenge those representations. The double designations of both districts, each roughly forty years apart, showed how the designation process has changed to reflect contemporary

understandings of heritage and diverse representation. The more recent designation reports highlighted both the social history and social significance of both districts and went into greater depth in both. However, in describing the social, economic, and architectural changes over time none of the reports connected those changes to historic urban planning or policy occurring in those time periods, effectively isolating preservation narratives outside of the timeline of urban histories. This has the dual effect of isolating the field of preservation professionally and of making it challenging to spatially place designation within historic narratives of equity and inequity, privilege and disprivilege, in urban geographies.

As in Boston and Cambridge, there was also a connection between designation and the start of changing trends in community make-up within the designation boundaries. Both historic districts studied are part of larger, historic Black neighborhoods and centers of social life and culture, and the significance of that social and cultural heritage was explicitly acknowledged in the later designations. In both cases, between the initial and the expanded designations, the population density of the districts fell, or continued to fall, and there were notable declines in the Black proportion of the population. The decline was greatest in Mount Morris Historic District, where the almost completely black population of the 1970s is on track to lose its majority status before the next census, if the current rates of decline continue. In both cases, the changing populations within the district did not reflect the population in the surrounding neighborhoods. While the Black population of the Bed-Stuy neighborhood is seeing some decline, it does not correspond to an increase in white populations. Changes in economic metrics in historic districts reflected the trends of the borough and city metrics, but the spatial analysis of social demographic shifts made particularly clear that the primary beneficiaries of the added economic value of preservation are new residents. Whether the new, expanded designations will correlate to changes in those trends remains to be seen and will require further analysis in the coming years.

One additional change between the 1970s and 2010s designation reports reflects on changing perspectives of how historical narratives are presented. Native Americans are not a group associated with disprivilege through redlining and later urban policy, as their persecution by the federal government occurred much earlier than redlining. However, it is another note of progress in inclusion in designation that the 2013 and 2015 district extension reports included an explanation of the so-called purchase of Manhattan and Brooklyn lands from the indigenous Lenape tribes who inhabited the land, acknowledging that the Lenape people had different mechanisms of land sharing than the Dutch and did not view the grant of land use to the same as ceding their rights to the land (LPC 2013; LPC 2015). This acknowledgement of New York City as unceded lands is meaningful, particularly compared to its handling in the 1970s designation reports, which either legitimized the Dutch taking of Lenape lands as an equitable purchase -as in the case of Mount Morris – or ignored any indigenous inhabitation altogether and began the history of the area when it was already under the rule of Dutch colonizers – as in the case of Bed-Stuy. It opens the door to considering how Lenape heritage can be acknowledged through historic preservation in the city's landscape in the future and adds another layer on efforts toward full and accurate representation.

Chapter 7: Findings & Further Research

Research Findings

This thesis aimed to investigate the question of whether preservation designations, and their impacts and benefits, are distributed equitably among people and spaces in American cities. The intention from the outset was not to answer these questions on a theoretical or qualitative basis, but to develop a geospatial methodology to spatialize and quantify the mechanisms by which equity was measured. By spatializing the geographies created by preservation, through the designation of historic districts, within the context of the discriminatory urban geographies created by redlining, this research moved beyond existing geospatial research that treats preservation's impacts as uniform across cities, to examine how preservation impacts are distributed across historically privileged versus disprivileged neighborhoods as a gauge for equity. The use of redlining as a lens, and its connection to longitudinal histories of disenfranchisement, allowed the spatialized examination of preservation's distributive effects to be understood within longer histories of inequity in American cities.

Distributive effects were queried in several ways through the geospatial analysis. An initial analysis examining the spatial distribution of geographies created through preservation designation, specifically analyzing the spatial patterns of designated districts and their proportional relationship to the spatial patterns of redlining as a factor of urban land area, found that no single relationship persisted across all six case study cities. This highlighted the local nature of preservation, from the aims of preservation policy to the magnitude of its impacts. Three of the six cities had proportional representation, or even greater than proportional representation, of redlined areas through landmark designation. In two cities there were clear, increasing trends of designations being made in historically disprivileged areas in the last two decades that led to the proportionality, or near proportionality, of

representation. In the other half of case study cities, historically redlined areas were under-represented by preservation designation, suggesting inequity in preservation outcomes.

Although the initial analysis focused on examining spatial relationships, social issues were inextricably linked to the data used. Referencing the HOLC Area Descriptions – which indicated the one or more racial and cultural groups that influenced the poor grade for the area – to the spatialized geographies revealed that historic districts were more common in areas redlined because of immigrant populations rather than in areas redlined because of Black residents. This complicated the analysis of spatial representation because even in cities where representation was spatially proportional, where preservation did not favor historically privileged urban areas, this did not necessarily correlate to equity between historically disprivileged groups. Given this finding, none of the case study cities can be said to have fully achieved equitable spatial representation, which suggested not only the need for broader localized spatial analyses but also the need to expand the spatialized data to include time series social and economic metrics to understand more specifically who benefits from preservation's effects and how.

The expanded analysis for the case study cities of Boston and Cambridge and New York City further reinforced the findings of inequity in the initial analysis. Socioeconomic metrics from 1940 through 2010, gathered from census data, were spatialized over the same geographies of designated historic districts and redlining and analyzed before and after designation. Historic districts in redlined areas were, unsurprisingly, the most racially diverse and densely populated areas of these cities during the period of institutional redlining. That diversity increased in the years leading up to the first major waves of designation in redlined areas, in the 1970s in New York City and the 1980s in Boston & Cambridge, but abruptly reversed itself in the decades after designation. Today the historic districts in historically redlined areas in all three cities are largely white spaces, with continuing downward trends in Black populations potentially

magnifying that effect in the future. Increasing population density in Boston and Cambridge means that the changes cannot be correlated to a loss in population but must be tied to in- and out-migration, or displacement, happening in these neighborhoods. While New York's historic districts have consistently lost population density in the decades after designation, the loss of residents is not sufficient to account for the drop in the Black population, meaning other forms of out-migration are affecting that city as well. Economically, the preservation value increase was supported by the analysis of unemployment and poverty rate metrics, as well as median home values. However, the margin of the increase was not consistent across all urban areas; in New York City in particular, historic districts in historically privileged areas experience a greater value increase than those in historically disprivileged areas.

The implications of the findings of both the initial and expanded analyses are perhaps best illustrated at the level of the individual historic districts within historically redlined areas. The diversity of racial and ethnic communities living in the South End Landmark District was a character-defining feature of the district when it was designated in 1983; concern over the displacement of those communities from current and future development was one of the impetuses cited for the designation effort. Yet in the decades after designation, the district experienced a shift in racial demographics at a scale greater than surrounding areas, greater even than racial shifts in historic districts in other grade areas, where white populations tended to fall after designation. The Black population plummeted, and the district became majority white. At the same time, the District's history as home to Boston's immigrants remained intact, with a consistent immigrant population in the years after designation, another instance of disparate outcomes for historically disprivileged social groups. The Mount Morris Extended Historic District in Manhattan experienced an even steeper trajectory of social change between its designation in 1971 and its extension in 2015. The Black community fell from 99% to 64% of the population between the initial designation and the designation of the extended district, a time period over which the Landmarks Preservation Commission described the expanded

district as a consistent Black enclave for more than half a century (LPC 2015). At the current trajectory of change, the Black population will no longer be the majority by the next decennial census. Change is not occurring as quickly in the Bedford Stuyvesant/Expanded Stuyvesant Heights Historic District in Brooklyn, but again the Black population within the district has fallen in the decades after designation while the Black population of the borough is increasing. In both New York districts, the population density has fallen since designation while the density of their respective boroughs remains constant; the loss of density does not explain the changes in racial make-up, but it does support the understanding of displacement from within the historic districts.

Economically, all three districts follow the trends of their cities and demonstrate increased economic value over the surrounding areas, boroughs, and cities. The notable difference in unemployment and poverty rates, and also average median home values to a lesser extent, between historic districts and the immediately surrounding neighborhoods challenged the idea of a buffer zone of benefit around historic districts. The expanded socioeconomic analysis makes clear that as the inhabitants of the districts have changed since designation; therefore, so have the social groups that are benefitting economically from the effects of preservation. These districts illustrate what can be found in the city-level socioeconomic data as well – Black communities, the most significantly disenfranchised group from redlining, are also not receiving an equitable distribution of preservation benefits.

Redlining was a practice and a federally institutionalized policy designed specifically to discriminate against specific racial and ethnic communities; it created vast geographies of injustice and effected de jure segregation in urban America. Its legacies continued to disenfranchise and disadvantage those geographies for decades and its effects linger today (Rothstein 2017). The preservation of historic districts, beginning in Charleston, may not have discrimination or segregation of historic narratives or communities as a stated intention, but

after nearly a century of neighborhood preservation through historic districts, the geospatial analyses of this thesis point to a clear answer as to whether preservation designations, and their impacts and benefits, are distributed equitably among people and spaces. They are not; not in the cities studied and, although further analysis of additional urban areas is needed, it is almost certainly not the case in many other cities across America as well. Ultimately, it is the outcomes, not the intentions, that define the legacies of preservation, and if the outcomes demonstrably show inequitable representation and benefit, the intentions of the field are secondary.

Preservation as a field is at a crossroads. While some of its many organizations and practitioners have begun the work of critically examining inequity in the field and imagining how more equitable outcomes are possible, they are nascent efforts, and many other parts of the profession – city agencies, practitioners, researchers – are reticent to move beyond long-held beliefs about the inherent good of preservation and the existing tools that support those beliefs in practice. New geographic and analytic technologies are available for preservationists to create the tools and methodologies necessary to interrogate existing policy and practice; determine how current issues of social, spatial, and environmental equity are being addressed; and make changes or create new models for policy, procedure, and practice to better achieve those aims. If that work is not carried out by academics and professionals in the field of preservation, other allied fields will continue to fill that void; this is already occurring in contemporary research, done by planners, economists, and legal scholars, and the results of that research, done without the foundation of preservation history, theory, and material knowledge, threatens to not only change the way preservation is understood but also the position of preservation as a unique profession as well. This thesis was designed to demonstrate the potential of geospatial tools to provide new and critical information on the practice of preservation in the service of analyzing – and ultimately improving – equity in preservation; the findings of this research support the need for that work and provide a

methodology by which to approach it. Further research can and should adapt and expand this methodology to contribute to the work of those preservationists interrogating and re-imagining a future in which preservation acts as the social, cultural, and environmental good its supporters have always believed it to be.

New Tools for Further Research

The methodology used for this geospatial analysis involved the creation of geographic information systems from publicly available federal, municipal, and institutional datasets. The two main features of that GIS that made it unique from current municipal-level research were the incorporation of HOLC Mortgage Security Map data as a representation of historic redlining practices and the creation of time series data for socioeconomic metrics. These features also represent the most significant avenues for expansion of this methodology in future research. The addition of more data layers related to historic urban policies and practices – e.g. urban renewal areas or the federal highway system – or to historic events acting on the urban environment – e.g. historic flood plains, earthquakes, or other natural disasters – would spatialize longitudinal histories across urban space so that current preservation designations could be situated and understood or future preservation plans could be projected to examine their relationship to injustice and privilege in the urban landscape. Similarly, the curation of more time series data from an expanded set of data metrics – e.g. education and income metrics or environmental quality metrics – can allow for both the further analysis of existing policy and practice and planning for equity in future efforts. Evaluating the sociospatial effects of historic practices provides data that could even be used to project the impact of new efforts and to tailor new policy and preservation tools before they enter the realm of practice. With the additional data available in expanded geospatial tools, preservation planning can expand as well, beyond new designations and new incentives for specific preservation activities. The quantified and spatialized data has the potential to underpin preservation agencies' standing

with already data-heavy agencies like planning and transportation. Whether it is used to advocate for the role of preservation in the urban landscape or to engage in inter-agency efforts to address critical concerns like mitigating future flood risks in low-lying coastal neighborhoods, which may have social or architectural value, greater engagement across fields of research and practice supports preservation's role in the future of American cities.

Alongside tools for analysis, evaluation, and planning is the necessary development of new mechanisms by which to encourage diversity in preservation and new tools to support those goals. These tools would address the need for procedural justice in preservation practice, as well as the distributive effects. Defining the intent of these new tools will be critical to their success, but equally critical will be the periodic review and analysis of their outcomes in relationship to the stated goals. Los Angeles' SurveyLA was an early example of a geospatial, data-driven tool used as a means of supporting long-term preservation planning with comprehensive information (Los Angeles City Planning n.d.). Its development was assumed to support greater representation and equity in preservation efforts, but based on findings of the initial analysis, designations in Los Angeles since SurveyLA began in 2010 have predominantly been in historically privileged areas, and there has been a notable decrease in the number of designations in historically disprivileged areas over the same time period compared to the decades prior. Analyzing the outcomes of preservation tools after a decade, as in LA, or after another suitable period of time would support evaluations of success toward stated goals and allow for modifications as needed to increase the equity and strength of impacts. Philadelphia is currently preparing to undertake its own digital historic resources survey, following the model of Los Angeles, with the specific intent of diversifying the breadth of preserved narratives across the city while significantly expanding preservation designations overall. Geospatial tools could be built into the development of that survey tool and used throughout the surveying process to query how intent is carrying through in the work. Conversely, the results of historic resource surveys like SurveyLA could be incorporated into the longitudinal

geographic information systems like those used in this thesis to create an even more robust preservation planning tool that can account for the formal qualities of the urban environment that architectural preservation aims to protect – e.g. building age, condition, architectural style, materiality and detailing – and correlate that information to the social and environmental attributes of a site, as well as historical legacies impacting the area.

As cities across the country reach critical turning points in debates around urban issues of equity, environmental justice, climate change policy, affordable housing and more, preservation faces an existential threat if it cannot place itself in a position of meaningfully supporting these causes. This threat is already occurring today; as discussed in Chapter 1, activists and community organizers in Seattle are currently asking for an effective embargo on preservation designations in their city over concerns that it negatively impacts efforts to expand affordable housing and equity (Share the Cities 2021). This makes the use of quantitative analytical data to support the role of preservation in the urban environment critical to the future relevancy and authority of the field, by providing measures of internal and external accountability, so that the value of preservation in cities can be demonstrated and expanded. The tools for this work are simply waiting for current and future generations of preservationists to engage them.

Bibliography

Redlining & Urban Policy

Aalbers, Manuel B. 2011. "The United States: One Century of Redlining" in *Place, Exclusion and Mortgage Markets*. West Sussex, United Kingdom: John Wiley & Sons, 77-102.

Aaronson, Daniel, Daniel Hartley, and Bhashkar Mazumder. 2017. "The Effects of the 1930s HOLC 'Redlining' Maps." Working Paper. Chicago, Illinois: Federal Reserve Bank of Chicago.

Frey, William H. 2015. Brookings Institute. "Census Shows Modest Declines in Black-White Segregation." *The Avenue*.

Frey, William H. 2020. Brookings Institute. "Even as Metropolitan Areas Diversify, White Americans Still Live in Mostly White Neighborhoods." Report. https://www.brookings.edu/research/even-as-metropolitan-areas-diversify-white-americans-still-live-in-mostly-white-neighborhoods/.

Greer, James L. 2014. "Historic Home Mortgage Redlining in Chicago." *Journal of Illinois State Historical Society* 107, no. 2: 204-233. https://doi.org/10.5406/jillistathistsoc.107.2.0204.

Hillier, Amy E. 2003. "Redlining and the Home Owners' Loan Corporation." Journal of Urban History 29, no. 4: 394–420. https://doi.org/10.1177/0096144203029004002.

Hillier, Amy E. 2005. "Residential Security Maps and Neighborhood Appraisals: The Home Owners' Loan Corporation and the Case of Philadelphia." *Social Science History* 29, no. 2: 207-233. https://www.jstor.org/stable/40267873.

Nelson, Robert K., LaDale Winling, Richard Marciano, Nathan Connolly. 1939a. "Mapping Inequality." *American Panorama*. Georeferenced Area Descriptions: Detroit, Michigan Area Descriptions D1-D62. Accessed January 2021. https://dsl.richmond.edu/panorama/redlining/.

Nelson, Robert K., LaDale Winling, Richard Marciano, Nathan Connolly. 1939b. "Mapping Inequality." *American Panorama*. Georeferenced Area Descriptions: Greater Boston, Mass. Area Descriptions D1-D12. Accessed January 2021. https://dsl.richmond.edu/panorama/redlining/.

Nelson, Robert K., LaDale Winling, Richard Marciano, Nathan Connolly. 1939c. "Mapping Inequality." *American Panorama*. Georeferenced Area Descriptions: Greater Boston, Mass. - Cambridge Area Descriptions D1-D2. Accessed January 2021. https://dsl.richmond.edu/panorama/redlining/.

Nelson, Robert K., LaDale Winling, Richard Marciano, Nathan Connolly. 1939c. "Mapping Inequality." *American Panorama*. Georeferenced Area Descriptions: New York City Area Description D23. Accessed January 2021. https://dsl.richmond.edu/panorama/redlining/.

Pogge, Jean. 1992. "Reinvestment in Chicago Neighborhoods: A Twenty-Year Struggle." In *Redlining to Reinvestment: Community Response to Urban Disinvestment,"* edited by Gregory Squires, 133-148. Philadelphia: Temple University Press.

Rothstein, Richard. 2017. *The Color of Law: A Forgotten History of How Our Government Segregated America*. New York: Liveright Publishing Corporation.

Stuart, Guy. 2003. *Discriminating Risk: The U.S. Mortgage Lending Industry in the Twentieth Century*. Ithaca, NY: Cornell University Press.

Yang, Philip Q. and Kavitha Koshy. 2016. “The ‘Becoming White Thesis’ Revisited.” *The Journal of Public and Professional Sociology* 8, no. 1 : Article 1. https://digitalcommons.kennesaw.edu/jpps/vol8/iss1/1.

Historic Preservation

Administrative Code of the City of New York chapter 3 §25-301. Landmarks Preservation, Preservation and Historic Districts. https://codelibrary.amlegal.com/codes/newyorkcity/latest/NYCadmin/0-0-0-45837.

Appler, Douglas and Andrew Rumbach. 2016. “Building Community Resilience Through Historic Preservation.” *Journal of the American Planning Association* 82, no. 2: 92-103. https://doi.org/10.1080/01944363.2015.1123640.

Been, Vicki, Ingrid Gould Ellen, Michael Gedal, Edward Glaeser, and Brian J. McCabe. 2015. “Preserving History or Restricting Development? The Heterogeneous Effects of Historic Districts on Local Housing Markets in New York City.” *Journal of Urban Economics* 92: 16-30. http://dx.doi.org/10.1016/j.jue.2015.12.002.

Boston Landmarks Commission. 1983. “The South End: District Study Committee Report.” Designation Report. https://www.cityofboston.gov/images_documents/South_End_Study_Report_13_tcm3-32476.pdf.

Charter of the City of New York Chapter 74 §3020. Landmarks Preservation Commission. https://nyc-charter.readthedocs.io/en/latest/c77/.

City of Detroit. 2019. Code of Ordinances. Chapter 21. Article II. “Historic Districts and Landmarks.” https://library.municode.com/mi/detroit/codes/code_of_ordinances?nodeId=PTIVDECO_CH21HI_ARTIIHIDILA_DIV1GE_S21-2-1PU.

Coulson, N. Edward and Robin M. Leichenko. 2004. “Historic Preservation and Neighborhood Change.” *Urban Studies* 41, no. 8: 1587-1600. https://doi.org/10.1080/0042098042000227028.

Eliason, Mike. 8 February 2021. “Are Historic Districts a New Variation to Restrictive Covenants?” *The Urbanist*. https://www.theurbanist.org/2021/02/08/are-historic-districts-a-new-variation-to-restrictive-covenants/.

Ellen, Ingrid Gould, Brian J. McCabe, and Eric Edward Stern. 7 March 2016. “Fifty Years of Historic Preservation in New York City” [white paper]. New York City: NYU Furman Center.

Fetzer, Kristin, Elizabeth Harvey, Ira Kauderer, and Laura Spina. 1998. Philadelphia Historical Commission. “Philadelphia Register of Historic Places: Historic Street Paving Thematic District.” District Inventory. https://www.phila.gov/media/20190213131359/Thematic-District-Street-Paving.pdf.

Foster, Katie. 2020. “Representational Equity in Historic Preservation” Final Report (Geographic Information Systems). Professor Leak Meisterlin, Columbia University Graduate School of Architecture, Planning, and Preservation.

Heintzelman, Martin D. and Jason A. Altieri. 2013. “Historic Preservation: Preserving Value?” *Journal of Real Estate Finance and Economics* 46: 543-563. doi: https://doi-org.ezproxy.cul.columbia.edu/10.1007/s11146-011-9338-8.

Kamin, Blair. 2017. “Landmark Crisis Paved the Way for Measures that Continue to Preserve City’s Historic Buildings.” *Chicago Tribune*.://www.chicagotribune.com/columns/ct-landmark-anniversary-kamin-met-0212-20170210-column.html.

Landmarks Preservation Commission. 1971a. “Mount Morris Park Historic District Designation Report.” Designation Report. http://s-media.nyc.gov/agencies/lpc/lp/0452.pdf.

Landmarks Preservation Commission. 1971b. “Stuyvesant Heights Historic District Designation Report.” Designation Report. http://s-media.nyc.gov/agencies/lpc/lp/0695.pdf.

Landmarks Preservation Commission. 2013. “Bedford Stuyvesant/Expanded Stuyvesant Heights Historic District Designation Report.” Designation Report. http://s-media.nyc.gov/agencies/lpc/lp/2496.pdf

Landmarks Preservation Commission. 2015. “Mount Morris Park Historic District Extension Designation Report.” Designation Report. http://s-media.nyc.gov/agencies/lpc/lp/2571.pdf.

Limp, W.F. 2000. “Geographic Information Systems in Historic Preservation.” In *Science and Technology in Historic Preservation*, *Advances in Archaeological and Museum Science*, vol. 4, edited by Ray A. Williamson and Paul R. Nickens, 231-247. Boston, Massachusetts: Springer.

Los Angeles City Planning Website. 2021. “Historic Resources Surveys.” Accessed 21 February 2021. https://planning.lacity.org/preservation-design/historic-resources-survey.

Mason, Randall. 2005. “Economics and Historic Preservation: A Guide and Review of the Literature.” Washington, DC: The Brookings Institution. https://pikehistoric.pbworks.com/f/Economics+and+Historic+Preservation.pdf.

Mason, Randall F. and Max Page. 2020. *Giving Preservation a History: Histories of Historic Preservation in the United States*. Philadelphia: Taylor & Francis.

Massachusetts Acts of 1975 chapter 772 (1975). December 16, 1975. Act Establishing The Boston Landmarks Commission. Boston, Secretary of the Commonwealth. https://archives.lib.state.ma.us/bitstream/handle/2452/33619/1975acts0772.txt?sequence=1&isAllowed=y.

McCabe, Brian J. and Ingrid Gould Ellen. “Does Preservation Accelerate Neighborhood Change? Examining the Impact of Historic Preservation in New York City.” *Journal of American Planning Association 82*, no. 2 (2016): 134-146. https://doi.org/10.1080/01944363.2015.1126198.

Municipal Code of the City of Cambridge chapter 2.78. 2020. Historical Buildings and Landmarks. https://library.municode.com/ma/cambridge/codes/code_of_ordinances?nodeId=TIT2ADPE_CH2.78HIBULA.

National Trust for Historic Preservation. October 2020. *Preserving African American Places: Growing Preservation’s Potential as a Path for Equity*. Washington, DC: National Trust for Historic Preservation African American Cultural Heritage Fund.

Newsom, Michael deHaven. 1971. “Blacks and Historic Preservation.” *Law and Contemporary Problems* 36: 423-431. https://scholarship.law.duke.edu/lcp/vol36/iss3/11.

Office of Historic Resources. n.d. “Info Brief: About the HPOZ Program.” Los Angeles, CA. Accessed 21 February 2021. https://planning.lacity.org/odocument/8fd1d80c-120d-4dc6-8fa9-52b7cd3762b3/Info%20Brief%20About%20the%20HPOZ%20Program.pdf.

Philadelphia Historic Preservation Task Force. 2019. “Final Report: Key Recommendations of the Philadelphia Historic Preservation Task Force” (Report). https://d54eda26-8f5e-47ee-9acc-49e0a8a92415.filesusr.com/ugd/c0d485_4b1083963b1344c9aa60986bb0acf2d4.pdf.

PlaceEconomics. 2016. “Historic Preservation: At the Core of a Dynamic New York City.” Report. New York City: New York Landmarks Conservancy.

PlaceEconomics website. Last updated 2016. Accessed April 2021. https://www.placeeconomics.com/resources/.

Roberts, Andrea R. 2020. “Preservation without Representation: Making CLG Programs Vehicles for Inclusive Leadership, Historic Preservation, and Engagement.” *Societies* 10, no. 3: 60. https://doi.org/10.3390/soc10030060.

Rose, Carol M. 1981. “Preservation and Community: New Direction in the Law of Historic Preservation.” *Stanford Law Review* 33, no. 3: 473-534. https://www.jstor.org/stable/1228356.

Ryberg, Stephanie R. 2012. “Historic Preservation’s Urban Renewal Roots: Preservation and Planning in Midcentury Philadelphia”.” *Journal of Urban History* 39, no. 2: 193-213. DOI: 10.1177/0096144212440177.

Ryberg-Webster, Stephanie and Kelly L. Kinahan. 2014. “Historic Preservation and Urban Revitalization in the Twenty-First Century.” *Journal of Planning Literature* 29, no. 2: 119-139. DOI: 10.1177/0885412213510524.

Rypkema, Donovan, Caroline Cheong, and Randall Mason. 2011. “Measuring Economic Impacts of Historic Preservation” Report to the Advisory Council on Historic Preservation. https://dahp.wa.gov/sites/default/files/Rypkema_economic-impacts-of-historic-preservation-study.pdf.

Share the Cities. March 2021. Public Letter. https://actionnetwork.org/letters/historic-preservation-study-seattle/?fbclid=IwAR3zaZhPmuFxow_IJgtOXDyiGRVSt8QAfNZPZO8Rkpg5WIrhMtlM8h5MoUE.

U.S. Census Bureau. 2020. Population Density, 1940. Prepared by Social Explorer. New York City, NY: Social Explorer. http://www.socialexplorer.com/pub/reportdata/HtmlResults.aspx?reportid=R12684036.

Wells, Jeremy C. 2021.“Does Intra-Disciplinary Historic Preservation Scholarship Address the Exigent Issues of Practice? Exploring the Character and Impact of Preservation Knowledge Production in Relation to Critical Heritage Studies, Equity, and Social Justice.” *International Journal of Heritage Studies* 27, no. 5: 449-469. DOI: 10.1080/13527258.2020.1799059.

Wilson, William Julius. 1996. *When Work Disappears: The World of the New Urban Poor*. New York: Knopf.

Yuhl, Stephanie E. 2020. “‘Charleston is Largely a Matter of Feeling’: Personal Politics, Preservation, and Power.” In *Giving Preservation a History: Histories of Historic Preservation in United States*, edited by Randall Mason and Max Page, 199-225. 2nd ed. New York, NY: Routledge.

Critical Theory

Soja, Edward J. 2010. *Seeking Social Justice*. Minneapolis, MN: University of Minnesota Press.

Geographic Information Systems

All maps created by Author. Datasets used in the creation of geographic information systems include:

Nelson, Robert K., LaDale Winling, Richard Marciano, Nathan Connolly. 2016. "Mapping Inequality." *American Panorama*. https://dsl.richmond.edu/panorama/redlining/.

Steven Manson, Jonathan Schroeder, David Van Riper, Tracy Kugler, and Steven Ruggles. IPUMS National Historical Geographic Information System: Version 15.0. 1940 Census Data [dataset]. Minneapolis, MN: IPUMS. 2020. http://doi.org/10.18128/D050.V15.0.

Steven Manson, Jonathan Schroeder, David Van Riper, Tracy Kugler, and Steven Ruggles. IPUMS National Historical Geographic Information System: Version 15.0. 1940 Census Boundaries; 2000 TIGER/Line Basis [shapefile]. Minneapolis, MN: IPUMS. 2020. http://doi.org/10.18128/D050.V15.0.

U.S. Census Bureau. "Census Blocks and Block Groups." In *Geographic Areas Reference Manual*. Washington, D.C.: U.S. Department of Commerce, November 1994. https://www.census.gov/programs-surveys/geography/guidance/geographic-areas-reference-manual.html#:~:text=The%20Geographic%20Areas%20Reference%20Manual,delineate%2C%20and%20revise%20those%20geographic.

Boston & Cambridge

Analyze Boston. "Open Space" [shapefile]. BostonMaps Open Data. Created 21 October 2014. Updated 07 December 2020. https://bostonopendata-boston.opendata.arcgis.com/datasets/2868d370c55d4d458d4ae2224ef8cddd_7.

BostonGIS. "City of Boston Boundary" [shapefile]. BostonMaps Open Data. Created 21 October 2014. Updated 7 December 2020. https://gis.cityofboston.gov/arcgis/rest/services/Planning/OpenData/MapServer/9.

Boston Landmarks Commission. "Boston Landmarks Commission (BLC) Landmarks" [filtered dataset shapefile]. BostonMaps Open Data. Updated 21 October 2020. http://gis.cityofboston.gov/arcgis/rest/services/EnvironmentEnergy/OpenData/MapServer/3/query?where=1%3D1&outFields=*&outSR=4326&f=json.

City of Boston. Landmarks Commission. Website. "Historic Districts in Boston." Accessed 1 January 2021. https://www.boston.gov/departments/landmarks-commission.

Cambridge Historical Commission. "Cambridge Historic Districts" [pamphlet]. Cambridge, MA: 2002. https://www.cambridgema.gov/-/media/Files/historicalcommission/pdf/historic_brochure.pdf.

City of Cambridge. "BOUNDARY_CityBoundary" [shapefile]. Geographic Information System: City of Cambridge, MA. Updated 10 June 2020. https://www.cambridgema.gov/GIS/gisdatadictionary/Boundary/BOUNDARY_CityBoundary.

City of Cambridge. City Council. *An Order Establishing the Half Crown-Marsh Neighborhood Conservation District*. Effective 30 July 2007. https://www.cambridgema.gov/-/media/Files/historicalcommission/pdf/hc_marsh_consol_order.pdf.

City of Cambridge. City Council. *An Order Establishing the Harvard Square Conservation District*. 18 December 2000. https://www.cambridgema.gov/-/media/Files/historicalcommission/pdf/HSqCD_order.pdf.

City of Cambridge. City Council. *Order Amending the Avon Hill Neighborhood Conservation District*. 14 December 2009. https://www.cambridgema.gov/-/media/Files/historicalcommission/pdf/AHNCD_order.pdf.

City of Cambridge. City Council. *Order Amending the Mid Cambridge Neighborhood Conservation District*. 8 June 1992. https://www.cambridgema.gov/-/media/Files/historicalcommission/pdf/MCNCD_order.pdf.

City of Cambridge. "HISTORICAL_HistoricDistricts" [shapefile]. Geographic Information System: City of Cambridge, MA. https://www.cambridgema.gov/GIS/gisdatadictionary/Historical/HISTORICAL_HistoricDistricts.

City of Cambridge. "HISTORICAL_NhoodConservationDist" [shapefile]. Geographic Information System: City of Cambridge, MA. Updated 09 October 2015. https://www.cambridgema.gov/GIS/gisdatadictionary/Historical/HISTORICAL_NhoodConservationDist.

City of Cambridge. “RECREATION_OpenSpace” [shapefile]. Last Modified 15 October 2020. https://www.cambridgema.gov/gis/gisdatadictionary/recreation/recreation_openspace.aspx.

Manson, Steven, Jonathan Schroeder, David Van Riper, Tracy Kugler, and Steven Ruggles. IPUMS National Historical Geographic Information System: Version 15.0. “1940 Census: Population & Housing Data (Tracts & NY Health Areas: Major Cities and Surrounds.” [dataset]. Minneapolis, MN: IPUMS. 2020. http://doi.org/10.18128/D050.V15.0.

Manson, Steven, Jonathan Schroeder, David Van Riper, Tracy Kugler, and Steven Ruggles. IPUMS National Historical Geographic Information System: Version 15.0. 1980 Census Data [dataset]. Minneapolis, MN: IPUMS. 2020. http://doi.org/10.18128/D050.V15.0.

Manson, Steven, Jonathan Schroeder, David Van Riper, Tracy Kugler, and Steven Ruggles. IPUMS National Historical Geographic Information System: Version 15.0. 1980 Census Boundaries; 2000 TIGER/Line Basis [shapefile]. Minneapolis, MN: IPUMS. 2020. http://doi.org/10.18128/D050.V15.0.

Manson, Steven, Jonathan Schroeder, David Van Riper, Tracy Kugler, and Steven Ruggles. IPUMS National Historical Geographic Information System: Version 15.0. “1980 Census: STF 3 – Sample-Based Data.” [dataset]. Minneapolis, MN: IPUMS. 2020. http://doi.org/10.18128/D050.V15.0.

Massachusetts Bureau of Geographic Information. “NEWENGLAND_POLY” [shapefile]. MassGIS. Created 10 December 2018. Updated 13 November 2020. https://docs.digital.mass.gov/dataset/massgis-data-new-england-boundaries.

Theresa Smith, Emily Himmelstoss, E. Thieler. "Massachusetts Shoreline Change Project: A GIS Compilation of Vector Shorelines and Associated Shoreline Change Data for the 2013 Update.” Reston, VA: U.S. Geological Survey (USGS), 2013.

U.S. Census Bureau. *2010 Census*. Table P1: Population [dataset]. Massachusetts State by Block. https://data.census.gov/cedsci/table?g=0400000US36.100000&tid=DECENNIALSF12010.P1&hidePreview=false.

U.S. Census Bureau. *2010 Census*. Table P6: Race (Total Races Tallied) [dataset]. Massachusetts State by Block. https://data.census.gov/cedsci/table?q=P6&g=0400000US36.100000&tid= DECENNIALSF 12010.P6&hidePreview=false.

U.S. Census Bureau. *2015-2019 American Community Survey 5-Year Estimates*. Table B05012: Nativity in the United States [dataset]. Massachusetts State by Census Tract.

U.S. Census Bureau. *2019 American Community Survey 5-Year Estimates*. Table B23024: Poverty Status in the Past 12 Months by Disability Status by Employment Status for the Population 20 to 64 Years [dataset]. Massachusetts State by Block Group. https://data.census.gov/cedsci/table?q=B23024&g=0400000US36.100000,36.150000&tid=ACSDT5Y2019.B23024&hidePreview=true.

U.S. Census Bureau. *2019 American Community Survey 5-Year Estimates*. Table B23025: Employment Status for the Population 16 Years and Over [dataset]. Massachusetts State by Block Group. https://data.census.gov/cedsci/table?q=B23025&g=0400000US36.100000,36.150000&tid=ACSDT5Y2019.B23025&hidePreview=true

U.S. Census Bureau. *2019 American Community Survey 5-Year Estimates*. Table B25077: Median Value (Dollars) [dataset]. Massachusetts State by Block Group. https://data.census.gov/cedsci/table?q=B25077&g=0400000US36.100000,36.150000&tid=ACSDT5Y2019.B25077&hidePreview=false.

U.S. Census Bureau. Geography Division. *TIGER/Line 2019 Massachusetts Census Block Groups* [shapefile]. 01 June 2019. https://www.census.gov/cgi-bin/geo/shapefiles/index.php?year=2019&layergroup=Block+Groups.

U.S. Census Bureau. Geography Division. *TIGER/Line 2019 Massachusetts Census Tracts* [shapefile]. 01 June 2019. https://www.census.gov/cgi-bin/geo/shapefiles/index.php?year=2019&layergroup=Census+Tracts.

U.S. Census Bureau. Geography Division. *TIGER/Line 2010 Massachusetts Census Block* [shapefile]. Washington, D.C.: Geographic Products Branch, 01 March 2011. Updated 01 December 2011. http://www2.census.gov/geo/tiger/TIGER2010/TABBLOCK10/tl_2010_25_tabblock10.zip.

Chicago

City of Chicago. "Boundaries - City" [shapefile]. Chicago Data Portal. June 2017. https://data.cityofchicago.org/Facilities-Geographic-Boundaries/Boundaries-City/ewy2-6yfk.

City of Chicago Housing & Economic Development. "Chicago Landmark Districts" [shapefile]. Chicago Data Portal. Updated 28 August 2011. https://data.cityofchicago.org/Historic-Preservation/Landmark-Districts/zidz-sdfj#.

Chicago Parks Department. “Parks – Chicago Park District Boundaries (Current)” [shapefile]. Chicago Data Portal. Created 19 March 2015. Updated 5 September 2019. https://data.cityofchicago.org/Parks-Recreation/Parks-Chicago-Park-District-Park-Boundaries-curren/ej32-qgdr.

Michigan Department of Natural Resources. “Lake Michigan Shoreline” [shapefile]. Created 27 April 2017. Updated 29 March 2019. https://gisago.mcgi.state.mi.us/arcgis/rest/services/OpenData/hydro/MapServer/12.

Detroit

City of Detroit. “Parks and Landmarks, Detroit” [shapefile]. Data Driven Detroit. Created 11 February 2014. 1 May 2015. https://services2.arcgis.com/HsXtOCMp1Nis1Ogr/arcgis/rest/services/Parks_Landmarks/FeatureServer.

Detroit GO DATA. "Detroit Local Historic Districts" [shapefile]. Open Data DETROIT. Created 27 August 2018. Updated 25 April 2019. https://services2.arcgis.com/qvkbeam7Wirps6zC/arcgis/rest/services/Detroit_Local_Historic_Districts/FeatureServer/0/query?outFields=*&where=1%3D1.

Michigan Department of Natural Resources. "Lake Erie Shoreline" [shapefile]. Michigan GIS Open Data. Created 27 April 2017. Updated 29 March 2019. https://gisago.mcgi.state.mi.us/arcgis/rest/services/OpenData/hydro/MapServer/11.

Michigan Department of Natural Resources. "Lake St. Clair Shoreline" [shapefile]. Michigan GIS Open Data. Updated 29 March 2019. https://gis-michigan.opendata.arcgis.com/datasets/midnr::lake-st-clair-shoreline?geometry=-167.718%2C75.106%2C-164.060%2C75.593.

Michigan Geographic Framework. City of Detroit. "City of Detroit Boundary" [shapefile]. City of Detroit Open Data Portal. Created 29 November 2018. Updated 9 September 2019. https://data.detroitmi.gov/datasets/city-of-detroit-boundary?geometry=-83.556%2C42.175%2C-82.642%2C42.530.

Los Angeles

LA County Parks. "Countywide Parks and Open Space (Public)" [shapefile]. Updated May 2020. https://geohub.lacity.org/datasets/lacounty::countywide-parks-and-open-space-public-hosted?geometry=-121.995%2C33.263%2C-114.585%2C34.855.

LA County Registrar. "City Boundaries" [shapefile]. Los Angeles Open Data. Created 16 November 2015. Updated 6July 2018. https://geohub.lacity.org/datasets/7835077624374b9fa65676443ba7a578_19?geometry=-121.950%2C32.178%2C-114.655%2C35.374.

Los Angeles County Department of Public Works. “LA County Boundary Feature Layer” [shapefile]. Los Angeles County Open Data. Created 23 June 2020. Updated 26 January 2021. https://dpw.gis.lacounty.gov/dpw/rest/services/PW_Open_Data/MapServer/13.

Los Angeles Department of City Planning. "Historic Preservation Overlay Zones" [shapefile]. Planning OpenData. Created 23 May 2014. Updated 2 November 2020. https://data.lacity.org/A-Well-Run-City/Historic-Preservation-Overlay-Zone/upvx-bixm.

U.S. Geological Survey, National Geospatial Program. "NHD for California State or Territory" [shapefile]. Reston, Virginia: U.S. Geological Survey, Created 2001. Updated 19 June 2020. https://www.usgs.gov/core-science-systems/ngp/national-hydrography/access-national-hydrography-products.

Philadelphia

City of Philadelphia. "Philadelphia Registered Historic Districts" [shapefile]. Open Data Philly. Created 16 August 2017. https://phl.carto.com/api/v2/sql?q=SELECT+*+FROM+historicdistricts_local&filename=historicdistricts_local&format=shp&skipfields=cartodb_id.

Delaware River Basin Commission. "Delaware River Boundary (2004)" [shapefile]. Pennsylvania Spatial Data Access. Updated 13 February 2006. https://www.state.nj.us/drbc/basin/map/GIS.html.

Philadelphia Department of Planning and Development. "City Limits" [shapefile]. OpenDataPhilly. Updated 22 July 2012. https://www.opendataphilly.org/dataset/city-limits/resource/19081a4f-47f8-4874-b484-e456102315ff.

Philadelphia Parks and Recreation. “PPR Properties” [shapefile]. Open Data Philly. Created 29 April 2015. Updated 09 April 2021. https://www.opendataphilly.org/dataset/ppr-properties.

Philadelphia Water Department. “Hydrology” [shapefile]. Open Data Philly. https://www.opendataphilly.org/dataset/hydrology.

New York City

New York City Department of City Planning. “New York City Borough Boundaries” [shapefile]. NYC Open Data. 10 August 2020. https://data.cityofnewyork.us/City-Government/Borough-Boundaries/tqmj-j8zm.

New York City Landmarks Preservation Commission. "New York City Historic Districts" [shapefile]. NYC Open Data. 1 July 2020. https://data.cityofnewyork.us/Housing-Development/Historic-Districts/xbvj-gfnw.

Steven Manson, Jonathan Schroeder, David Van Riper, Tracy Kugler, and Steven Ruggles. IPUMS National Historical Geographic Information System: Version 15.0. 1970 Census Data [dataset]. Minneapolis, MN: IPUMS. 2020. http://doi.org/10.18128/D050.V15.0.

Steven Manson, Jonathan Schroeder, David Van Riper, Tracy Kugler, and Steven Ruggles. IPUMS National Historical Geographic Information System: Version 15.0. 1970 Census Boundaries; 2000 TIGER/Line Basis [shapefile]. Minneapolis, MN: IPUMS. 2020. http://doi.org/10.18128/D050.V15.0.

U.S. Census Bureau. *2010 Census*. Table P1: Population [dataset]. New York State by Block. https://data.census.gov/cedsci/table?g=0400000US36.100000&tid=DECENNIALSF12010.P1&hidePreview=false.

U.S. Census Bureau. *2010 Census*. Table P6: Race (Total Races Tallied) [dataset]. New York State by Block. https://data.census.gov/cedsci/table?q=P6&g=0400000US36.100000&tid=DECENNIALSF 12010.P6&hidePreview=false.

U.S. Census Bureau. *2019 American Community Survey 5-Year Estimates*. Table B23024: Poverty Status in the Past 12 Months by Disability Status by Employment Status for the Population 20 to 64 Years [dataset]. New York State by Block Group. https://data.census.gov/cedsci/table?q=B23024&g=0400000US36.100000,36.150000&tid=ACSDT5Y2019.B23024&hidePreview=true.

U.S. Census Bureau. *2019 American Community Survey 5-Year Estimates*. Table B23025: Employment Status for the Population 16 Years and Over [dataset]. New York State by Block Group. https://data.census.gov/cedsci/table?q=B23025&g=0400000US36.100000,36.150000&tid=ACSDT5Y2019.B23025&hidePreview=true

U.S. Census Bureau. *2019 American Community Survey 5-Year Estimates*. Table B25077: Median Value (Dollars) [dataset]. New York State by Block Group. https://data.census.gov/cedsci/table?q=B25077&g=0400000US36.100000,36.150000&tid=ACSDT5Y2019.B25077&hidePreview=false.

U.S. Census Bureau. Geography Division *TIGER/Line 2019 New York Census Block Groups* [shapefile]. 01 June 2019. https://www.census.gov/cgi-bin/geo/shapefiles/index.php?year=2019&layergroup=Block+Groups.

U.S. Department of Commerce. U.S. Census Bureau. Geography Division. *TIGER/Line 2010 New York Census Block* [shapefile]. Washington, D.C.: Geographic Products Branch, 01 March 2011. Updated 01 December 2011. http://www2.census.gov/geo/tiger/TIGER2010/TABBLOCK10/tl_2010_36_tabblock10.zip.

Maps and Figures

All maps and figures were created by the author from data generated in the analytical geographic information systems created for this thesis. All datasets and shapefiles included in the *Geographic Information Systems* section of this bibliography were components of that GIS.

Figure 12 and Figure 13 were previously submitted as part of the Final Report submission for the GSAPP Fall 2020 Geographic Information Systems course taught by Professor Leah Meisterlin and were used here with the permission of my thesis advisor.

Appendix A
Geographic Information System Methodology

Initial Analysis

Data sets for the proportional analysis included HOLC map data, city boundaries, historic district boundaries, and relevant hydrology that intersects or bounds cities. Data was imported into the geographic information system and projected as feature classes into a geodatabase for the city analysis in the relevant state plane projected coordinate system with the US foot as the standard linear unit.

Boston & Cambridge	North American Datum 1983 State Plane Massachusetts Mainland FIPS 2001
Chicago	North American Datum 1983 State Plane Illinois East FIPS 1201
Detroit	North American Datum 1983 State Plane Michigan South FIPS 2113
Los Angeles	North American Datum 1983 State Plane California V FIPS 0405
Philadelphia	North American Datum 1983 State Plane Pennsylvania South FIPS 3702
New York City	North American Datum 1983 State Plane New York Long Island FIPS 3104

A new double-type field was added to the attribute tables of both the HOLC map and historic district layers. This field was used to calculate the geometry for the area of each representative polygon in acres. For historic district data for which designation year was not an existing attribute, an integer field was added to the attribute table and this data was added manually, where possible, pulling from municipal data and designation reports.

The HOLC map data was then extracted by Area Grade, based on the HOLC grading system ranging from 'A' to 'D', into four distinct data feature classes. Historic district data was queried based on locational intersections with the grade area layers. For single polygon, contiguous historic districts, those with centroids located in each HOLC grade area were extracted to their own feature class. For multi-part polygon districts, e.g. Philadelphia's Historic Street Paving

Thematic District, the multi-part polygon was dissolved into its individual features before being queried and extracted.

Once all feature classes had been set up in the geographic information system, summary statistics was used to calculate land area, in acres, of all HOLC grade areas and historic districts within those grade areas. These were compared to the total land area within the city boundary and within all historic districts cumulatively. The designation year attribute added to the data earlier was used to select and quantify the number of historic districts within each HOLC grade area during the three established time periods: pre-1980, 1980-1999, 2000 and later.

Expanded Analysis – Contemporary Data

In order to join and spatialize demographic datasets, TIGER/Line shapefiles for state-level 2010 Census blocks and 2019 American Community Survey (ACS) block groups were imported into the GIS, projected into the appropriate state plane projected coordinate systems, and clipped to the city boundaries.

Five demographic datasets were used for each city analyzed:

- 2010 Census: Population
- 2010 Census: Race
- 2019 American Community Survey (5-Year Estimate): Employment Status for Population 16 Years and Over
- 2019 American Community Survey (5-Year Estimate): Poverty Rate
- 2019 American Community Survey (5-Year Estimate): Median Value (Housing, Dollars)

The tables were edited to include only blocks and block groups within the city boundaries and cleaned to remove all null values. Tables were imported into the GIS and exported as file geodatabase tables. A new string attribute was added to all dataset tables and leading digits were removed from Geographic Identifiers (GEOIDs) in the new field to allow for an attribute-

based join with block and block group feature classes. 2010 census datasets were joined to the 2010 census block feature class; likewise, 2019 ACS datasets were joined to the 2019 census block feature class.

To query population density and racial make-up of population, census blocks were selected by location. The selection was based on the centroid of the selected block being located within the boundaries of each HOLC-grade area, historic districts within each grade area, and overall historic district and city boundaries. HOLC areas were based on block boundaries forming implied geographies, making this selection method appropriate. Likewise, historic districts are at a larger, typically multi-block scale, so the selection method ensured that full blocks within districts, and blocks where the majority of the block falls within the district boundary, were included in data analysis. From the selections, summary statistics were used to pull cumulative data on population and race. Population density was calculated using the area in acres calculated in the proportional analysis. Racial make-up was calculated as percentages of population for White, Black, and Other/Multi-Racial racial identities.

Employment status, poverty rate, and median housing value were analyzed at the census block group level because block-level data was not available for those metrics. The larger unit required a re-evaluation of the selection method, given the likelihood that both HOLC grade area and historic district boundaries would run through block groups. Queries were run for HOLC grade area and Historic District feature classes with centroids within the target ACS Census Block Group layer and for those intersecting the target layer. For the first case study city, New York, the difference in poverty rate calculations between both selection methods was 2.5 percentage points, with 70% of queries having deltas of less than 1 percentage point; the difference in percentage increase in average median value was within 10 percentage points; and the unemployment rate was within 0.25 percentage points. In the second case study city of Boston-Cambridge, the difference in poverty rate calculations between both selection methods

ranged between 1 to 5 percentage points, with an average variance of 1.9 percentage points; the percentage increase in average median housing value was equivalent with both selection methods; and the unemployment rate was within 1.0 percentage points with one outlier. For the average median housing value, 'intersection with the target layer' was selected as the selection method because the median values are considered uniform across the census block data area, so every area intersecting the query area was relevant to the analysis. For both the poverty rate and unemployment, 'centroid within the target layer' was selected as the selection method because that selection minimized the inclusion of block groups in the query area with minimal overlapping area and maximized the amount of HOLC grade area and Historic District area represented in the query. A proportional division of the data for poverty rate and unemployment was not attempted because the implications of the modifiable areal unit problem were considered more problematic that the inclusion of minor segments of extraneous area, through the inclusion of partially-encompassed block groups, in the summary statistics used for data analysis. Primarily, the assumption of uniform population spread across the block group area, and equally the assumed uniform dispersion of those living below the poverty line and those who are unemployed, necessary for a proportional division were considered problematic. Once the selection methods were finalized, the summary statistic data was analyzed and used to calculate poverty rate, average median housing value, and unemployment within HOLC grade areas, Historic District areas, and the case study cities.

Expanded Analysis – Historical Data

To examine the demographic trends across time, historic datasets were sourced from the IPUMS National Historic Geographic Information System INHGIS) from 1940, 1970, and 1980 decennial censuses. Census tract shapefiles for the corresponding census years were also sourced from NHGIS. The shapefiles were imported into the existing GIS for the case study cities of New York City and Boston, projected to their respective state plan projected coordinate

systems, and clipped to the city boundaries. A double type field was added to the attribute table and the calculate geometry feature was used to add an area attribute, in acres.

Demographic datasets used varied by year and availability for each census and data from multiple datasets was used where necessary to correspond to the social markers examined in the contemporary analysis. Note that no data corresponding to poverty rate were available for 1940. For 1940, the dataset *1940 Census: Population & Housing Data* included the following tables:

- Population
- Population by Race
- Sex by Unemployed/Seeking Work Status
- Sex by Labor Force Status
- Median Value of Homes for Which Value was Reported

For 1970 and 1980 census data, multiple datasets were necessary:

- 1970 Census_ Count 2 – 100% Data [Tracts, Urban Areas, Metro Areas, etc.]
- 1970 Census: Count 4Pa – Sample-Based Population Data
- 1970 Census: Count 4Pb – Sample-Based Population Data with Race/Ethnicity Breakdown
- 1980 Census: STF 1 – 100% Data
- 1980 Census: STF 3 – Sample-Based Data
- 1980 Census: PL 94-171 Population Counts

From those datasets, the following tables were cleaned and imported.

- 1970/1980 - 100% Population
- 1970/1980 – Race
- 1970 – Employment Status
- 1980 – Aggregate Weeks Unemployed in 1979 by Sex
- 1970 – Poverty Status by Age
- 1980 – Poverty Status in 1979
- 1970 – Value (Owner-Occupied Units)
- 1980 – Median Value (Specified Owner-Occupied Noncondominium Housing Units)

The datasets tables initially included all census tracts nationally; data was removed and limited to the counties within the case study cities only. Functions modifying data to allow for analysis of selected social metrics using summary statistics in ArcMap were completed in tables prior to importation. Attribute columns were relabeled and data was cleaned to remove all null values. The datasets were imported into the GIS and exported as file geodatabase tables. NHGIS had established a common attribute between data tables and census tract boundaries, which was used to join all tables to the census tract polygons.

The census tract module was the only one for which spatialized historic demographic data was available. Although the US Census Bureau first began using census blocks as a module for data collection in the 1940 census, it was for select metrics only; full census data was not collected at the block and block group level for all major urban areas until 1990 (U.S. Census Bureau 1994). Unlike the smaller modules used for the contemporary demographic analysis, which largely fit within the larger historic district and HOLC grade area boundaries making a select by location process appropriate for querying data, census tracts are much larger and more irregular because their delineation was based on consistent ranges of population counts within each tract and the perceived homogeneity of those populations (U.S. Census Bureau, 1994). There are fewer and larger census tracts for progressively older decennial censuses based on those standards of delineation. The larger module meant that tract boundaries in many cases did not align or closely follow the boundaries of HOLC grade areas and smaller historic districts often occupied small portions of multiple census tracts. Therefore, a proportional calculation and analysis of the data was used for the historic demographic analysis.

The census tract boundary layer was clipped to each HOLC and historic district grade area layer, creating new data layers for each. A new attribute field was added and the geometries were recalculated in acres for the clipped census tract polygons. The ratio of the clipped polygon acreage to the original tract polygon acreage was calculated to give the proportion of

each census tract within the boundaries of analysis. This proportional value was used to calculate the proportional amount of each census tract data point – total population count, population count by race, labor force and unemployment counts, and poverty rate counts – within the analysis boundaries using the field calculator and a multiplication feature.

After the proportional values were calculated for each of the data metrics, summary statistics were used to gather cumulative data on population counts, race, unemployment, and poverty rate in the years for which poverty rate data was available. Population density was again calculated using the area in acres calculated in the proportional analysis. Racial make-up, unemployment, and poverty level rates were calculated as percentages of the population. Median housing value, for the years for which that data metric was collected, was analyzed in the same way in the historic, proportional analysis as it had been for the contemporary analysis.

It is understood that the approach taken for this historical data spatial analysis creates a modifiable areal unit problem in that it assumes that these populations are evenly dispersed across the data module in all cases and will therefore be accurately represented by a proportional calculation based on a partial module area. This is unlikely to be the case within any individual module, as census tracts include all types of land uses and housing typologies largely indiscriminately, which could cause clustering of populations and employment centers. As the foundational research on which this analysis is built shows, it can also be assumed that racial and ethnic communities are more likely to be segregated – and therefore clustered – than diffuse. However, given the standard for census tract divisions, of relatively uniform interior population counts and homogeneity of communities, it can be assumed that there is some level of diffusion within the module. The purpose of this analysis is also to determine whether or not historic trends exist with relation to the contemporary data analysis, not to calculate with exact precision the historic data metrics of specific areas, which allows for the margins of error

necessary in a proportional analysis. Given the lack of other available data options for the historical timeframe this research covers, and the intent of the historical analysis, it was decided that the value and use of the analyzed data outweighed the concerns of the modifiable areal unit problem created; however, it must be acknowledged when reviewing the findings of this analysis.