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Making the City of Lakes: Whiteness, Nature, and Urban Development in Minneapolis

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Minneapolis has the twin distinctions of having one of the most highly rated park systems in the United States and some of the most pronounced racial disparities in wealth and homeownership. We argue that this coupling of urban nature and racial inequality was intentionally produced by the city's real estate industry and local government. Drawing on Mapping Prejudice's first complete metro-wide map of racial covenants—clauses in property deeds barring sale to anyone not considered white—we pair quantitative spatial analysis with archival research on turn-of-the century greening campaigns and local real estate practices. We use two developments, Nokomis Terrace and Walton Hills, as illustrative examples of the ways in which developers worked with civil society organizations and local government agencies to secure public investments in green amenities, including gardens and public parks, while blanketing their developments with racial covenants. To boost property values, developers paired “greenness” and legal guarantees of whiteness, engineering idealized nature while excluding racialized groups. The result was that 73 percent of park acreage added from 1910 to 1955, the period in which covenants were used in Minneapolis, had at least one racial covenant within 0.1 miles. Our research links urban greening, racialization, housing discrimination, and environmental injustice with consequences for understanding and confronting environmental inequalities today. *Key Words:* *historical geography, parks, racial covenants, urban greening, white supremacy.*

On 5 July 1911, citizens of Minneapolis crowded around a newly constructed canal to witness the official “linking of the lakes.” This ceremony was the centerpiece of the Minneapolis Civic Celebration, a concerted effort by city boosters to paint the city as one of the nation's most prosperous and progressive (Borchert 1983). Settler colonial imagery was front and center; a historical pageant celebrated Minneapolis's “triumph” over Minnesota's indigenous peoples and growth from frontier outpost on the northern reaches of the Mississippi River to thriving metropolis built on the wealth of Minnesota's natural resources (Cronon 2009 [1991]; Hugill 2016; Figure 1), while hawkers sold the celebration's official souvenir—a caricatured figurine of a native person, described as “little red-brown squatly figures with beady eyes, red feathers in their hair” (“Civic Fete Souvenir Arrives” 1911). The celebration also showcased the city's verdancy. To beautify the city, the planning committee funded the Garden Club—a nascent civic improvement effort—to adorn the main thoroughfares with flower garlands and convert 325 vacant lots to vegetable gardens (“Linking of the Lakes Marks New Civic

Era” 1911). The most anticipated event was the opening of the new canal, which represented the culmination of the efforts of the Park Board—a semiautonomous local government body—to reshape Minneapolis's landscape, turning prairie and mosquito-ridden swamps into tree-lined streets and pristine lakes surrounded by parkland (Smith 2008). Both the Park Board and Garden Club worked to reorder the city's environment to reflect an idealized, tamed nature, “improved” by and for white settlers (DeLuca and Demo 2001; Gandy 2003). The Civic Celebration promoted a vision of Minneapolis as teeming with manicured nature, a booming economy, modern city building, and a dash of frontier exoticism, embodying Progressive Era beliefs that the physical landscape and social fabric of cities could—and should—be reengineered (Hays 1964; Klaus 1991). In the decades that followed, Minneapolis's civic and business leaders did just that, pairing ecological transformation with racial covenants, new tools to promote housing segregation, to imbue the city's landscape with the logic of white supremacy.



Figure 1. Image of Civic Celebration floats. The floats celebrated Greco-Roman ideals of Western civilization, industrial prowess, extraction of Minnesota's natural resources, and white settler colonialism, constructing an image of Minneapolis as a city at the forefront of contemporary ideas about progress (Planners of the Minneapolis Civic Celebration 1911, 9).

Although Minneapolis has been hailed a progressive “miracle” due to its high overall rates of wealth and homeownership, aggregate measures mask deeply entrenched racial inequalities that are among the

worst in the nation (Nickrand 2015). Minneapolis ranks 97th and 99th of the 100 largest U.S. metros in the Black–white homeownership and income gaps (Ingraham 2020), inequalities that reached a

boiling point following the police murder of George Floyd, which sparked a global wave of protests for racial justice in 2020. Despite having one of the most highly rated park systems in the nation, Minneapolis also has wide disparities in park access and environmental quality (Campbell 2016). This article traces the coconstitution of these outcomes, with roots stretching back more than a century. To do so, we draw on the first complete, digitized, parcel-level map of racial covenants—clauses inserted into deeds that barred sale to or occupancy by anyone not racialized as white—for any major U.S. city produced by Mapping Prejudice (Ehrman-Solberg, Keeler, et al. 2020). We pair these data with archival case studies of two developments in turn-of-the-century Minneapolis—the Walton Hills and Nokomis Terrace Additions—to explore how nature, race, and wealth inequality were intentionally coupled and the remarkable durability of this pattern (Figure 2). We show how, through parks, gardens, and racial covenants, developers capitalized on both the idea of whiteness and idealized “nature,” reshaping the ecologies and geographies of the city to reflect the logic of white supremacy.

Racial Covenants and the Production of Urban Environmental Privilege

Activism and research on environmental injustice has widely documented that environmental harms in cities—air pollution, proximity to toxic sites, lead-contaminated drinking water—disproportionately affect communities of color (Bullard 2018 [1990]). Pulido (2000), in her analysis of Los Angeles, demonstrated that the geographies of environmental injustice are produced through discriminatory housing markets defined by racialized access to spaces and mobility, with white residents’ disproportionate access to housing programs, credit, and wealth enabling them to move away from harmful toxic environments. Building on Pulido, Park and Pellow (2011) coined the term “environmental privilege” to describe the way in which “the exercise of economic, political, and cultural power that some groups enjoy ... enables them exclusive access to coveted environmental amenities such as forests, parks, mountains, rivers, coastal property, open lands, and elite neighborhoods” (4). Looking at nineteenth-century wetland reclamation projects, Dillon (2022) demonstrated that the production of white settler

geographies relied on the destruction of landscapes perceived as undesirable. Geographers have shown that landscapes of pollution, exclusion, and privilege are not simply a reflection of racism, but are constitutive to the process of racialization, animated by the logic of white supremacy (Pulido 2015; Bonds and Inwood 2016; Dillon 2022). White racial identity is constructed, in part, in and through segregated residential neighborhoods (Dwyer and Jones 2000; Barraclough 2009). Similarly, managed urban green spaces were often conceptualized as refugia of whiteness in the “racially othered” city, simultaneously constructing idealized nature and giving shape to whiteness (Loughran 2017). Thus, both urban nature and segregated neighborhoods are spaces through which whiteness is discursively produced and are intimately connected to the “structural, material, and corporeal production of white racial hegemony” (Bonds and Inwood 2016). We build on this work, considering how idealized urban nature—manicured private lawns and gardens, pastoral urban parks, tamed waterways, and tree-lined streets—and historic mechanisms of racial segregation were mobilized in tandem by real estate developers in Minneapolis to court white residents, creating exclusive spaces of environmental privilege.

Newly digitized historical data sets offer granular insight into the policies and practices that contributed to the making of racialized urban nature. The “redlining” maps from the Home Owners’ Loan Corporation, for example, have expanded our understanding of how racialized residential space structures urban environments. Recently, a proliferation of analyses finds correlations between redlining maps and tree canopy cover (Locke et al. 2021), exposure to extreme heat events (Hoffman, Shandas, and Pendleton 2020), access to greenspace (Nardone et al. 2021), vulnerability to flooding (Katz 2021), and exposure to air pollution (Lane et al. 2022). These analyses make visible one historic process through which patterns of environmental injustice were produced.

Racial segregation was already deeply entrenched, however, prior to the federal government’s redlining policies (Fishback et al. 2020). Before redlining, racial covenants were the primary legal tool used to establish and enforce racial segregation in both the Jim Crow South and in “progressive” northern cities like Minneapolis (Tretter, Sounny, and Student 2012), particularly after the U.S. Supreme Court

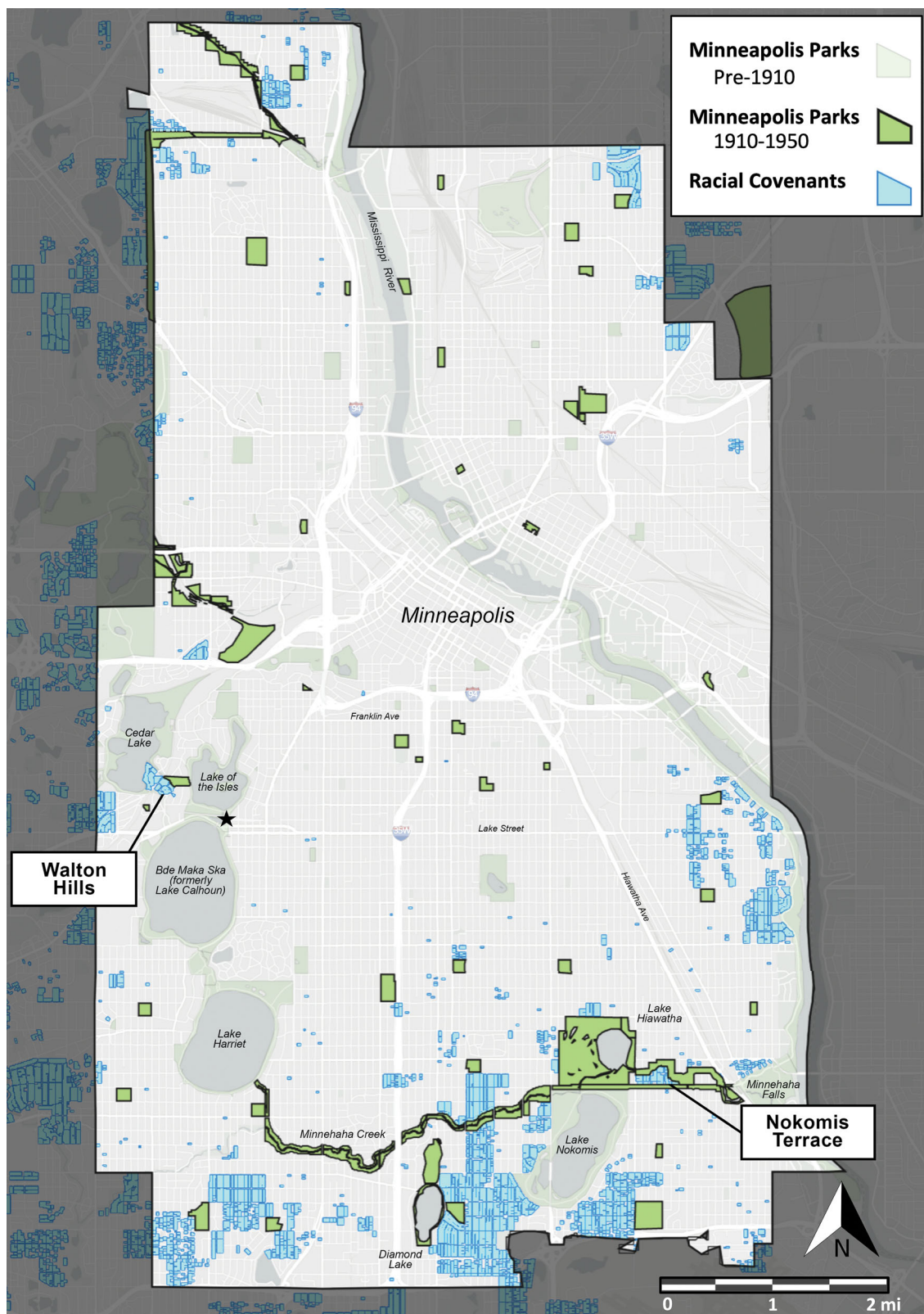


Figure 2. Racial covenants and additions to the Minneapolis Park System, 1910 to 1955. Racial covenants are indicated in blue, parks opened between 1910 and 1955 are shown in bright green, boxes indicate location of case studies, and the black star indicates the location of the new canal opened during the Civic Celebration. Shaded areas are beyond Minneapolis city limits. We used nearest neighbor analysis to determine the minimum linear distance between each new park and a property that had a racial covenant. From 1910 to 1955, during which racial covenants were added to deeds in Minneapolis, the Park Board added forty-eight new parks, totaling 1,163 additional acres. Nearest neighbor analysis shows that 846 (73 percent) acres were within one Minneapolis city block (0.1 mi) of a parcel with a racial covenant. Covenant data are from Mapping Prejudice, and park data are from the City of Minneapolis.

banned racial zoning in 1917 (Silver 1991). Added by real estate developers to ensure racial exclusivity, racial covenants restricted who was able to purchase a home and accumulate intergenerational wealth in particular neighborhoods. Once these covenants were attached to a property, they were nearly impossible to remove (Jones-Correa 2000). Covenants produced value through the logic of white supremacy in a racialized real estate market. Marketed by real estate developers as an amenity, covenants ascribed a value to whiteness, both as an excludable racial category and as exclusive property (Harris 1993). The legality of racial covenants was upheld in several court cases until 1948 when the Supreme Court ruled them unenforceable and the Fair Housing Act of 1968 finally made them illegal (Rothstein 2017).

Until recently, it was not possible to systematically analyze the impact of racial covenants on urban landscapes. Covenants were written into millions of undigitized property deeds, recorded in county offices, and did not use standardized language that would allow for a simple word search of digital records. Thus, although researchers have long understood that covenants were part of a suite of tools and technologies that contributed to urban racial segregation and dispossession, assessments of their precise geographies remained elusive until methodological interventions by Mapping Prejudice. Using digital tools and volunteers, Mapping Prejudice developed a method to map every racially restrictive covenant in Hennepin County (where Minneapolis is located), resulting in the first data set of its kind (Ehrman-Solberg, Petersen, et al. 2020).

This new map provided residents, activists, and researchers the first opportunity to systematically assess the way that covenants were integrated into development regimes in key moments of Minneapolis's history and growth. In particular, the Mapping Prejudice team showed that, prior to the introduction of covenants in 1910, the residences of people of color were dispersed throughout the city, yet as developers added thousands of racial covenants to deeds in Minneapolis until 1955, the city's neighborhoods became increasingly racially segregated, with people of color concentrated into neighborhoods without covenants while south and western neighborhoods became nearly exclusively white (Mapping Prejudice 2021). Here, we draw on Mapping Prejudice's innovative data set to explore the role of private interests,

real estate practices, and developers in promoting, extending, and emplacing racial exclusion to shed new light on the co-production and reproduction of geographies of whiteness and urban nature.

Methodological Approach

We draw on the first fully digitized spatial data set of racial covenants for a major U.S. city (Ehrman-Solberg, Keeler, et al. 2020) to identify the ways in which whiteness was inscribed on and is reproduced by the landscape. We couple this data set with archival research and digital mapping tools to understand the logic, rooted in white supremacy, that historically linked idealized urban nature and racial exclusivity and the legacy of that history today.

To build the covenants database, the Mapping Prejudice team used optical character recognition (OCR) to read and digitize the 1.4 million property warranty deeds from Hennepin County. The OCR-generated text translations of deeds were then digitally analyzed for passages containing language about race. Once deeds containing racial language were identified, spatial data on the location of these properties was identified through online crowdsourcing and converted into shapefiles by the Mapping Prejudice team (Mapping Prejudice 2021). Covenants appear in deeds in Minneapolis from 1910 to 1955.

We situate the covenant data in relation to the Park Board, Garden Club, and other local archives to understand how investments in urban nature occurred concurrently with investments in whiteness. Archival sources include historical newspapers, correspondences and reports of the Minneapolis Park and Recreation Board, real estate trade publications, and property records. We also use geographic information system (GIS)-based proximity analysis to quantify the proportion of the city's investment in new parks from 1910 to 1955 that falls within 0.1 mi (approximately one city block) of a covenanted property. Finally, we investigate the relationship between contemporary neighborhood racial demographics and land surface temperature, tree canopy cover, and park acreage (see [Appendix](#) for detailed data sources and analytical methods).

Selling the City of Lakes

The first racial covenant in Minneapolis was recorded by Edmund Walton in 1910, a year prior to the Linking of the Lakes celebration (Delegard and Petersen 2019). Walton was a real estate mogul, adding more than forty additions to Minneapolis, and a leader in the city's business and civic life, helping to organize the Minneapolis Real Estate Board, participating in the National Association of Real Estate Exchanges (NAREE), and serving as president of the Garden Club ("Garden Club Sounds Call to Enroll Now for Year of City Beautiful Work" 1916; Delegard and Petersen 2019).

Walton also served on the planning committee of Minneapolis's Civic Celebration and had a personal stake in ensuring the celebration's success ("Planners of the Minneapolis Civic Celebration" 1911). Two years prior to the Civic Celebration, in February 1909, Walton purchased forty-one acres along the southwest shore of the Lake of the Isles, dividing the land into the 126 lots to form Walton Hills First and Second Additions to Minneapolis (Doc. No. 515805 (pg. 16) 515805 1909; Doc. No. 546436 (pg. 448) 546436 1909). Included were five acres of swamp extending westward from Lake of the Isles (Block 5 in Figure 3A), and although wetlands were at this time seen as unsafe and undesirable, in those five acres, Walton spotted an opportunity. His land acquisition came amidst a Park Board campaign to dredge Lake of the Isles and "beautify" the marshy lakeshore ("Dredging at Lake of the Isles Will Beautify Lake" 1907; Smith 2008). An earlier 1890s dredging campaign had boosted interest in Lake of the Isles real estate, and developers hoped that this round would transform this marshy region on the western outskirts of the city into one of Minneapolis's most desirable and expensive neighborhoods. A discussion in the real estate section of the Minneapolis Tribune noted,

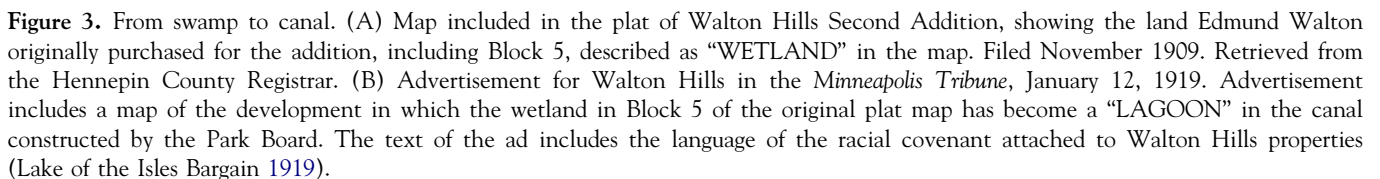
Last winter, the Board of Park commissioners entered into a contract ... to remove 250,000 cubic yards of earth from the bottom of [Lake of the Isles] ... as a result, lots around the shoreline have been steadily increasing in value. By the end of the summer, the entire lake will be as it should be, and it is assumed that hundreds of new houses will be built where once was nothing but swampland. ("Over 250,000 Yards of Dirt Being Removed at Lake of the Isles" 1908)

The Park Board also planned canals connecting Lake of the Isles to its two neighboring lakes. Like the dredging campaign, the new canals were seen as a boon for real estate, with newspaper headlines proclaiming, "Canal Zone Lots Much in Demand ... Recent Developments Only Add to the Desirability of This Section" ("Canal Zone Lots Much in Demand" 1909).

Knowing the Park Board's aspiration to connect Lake of the Isles to Cedar Lake, Walton purchased inexpensive low-lying land between the two lakes. Rather than paying to infill the swampy portion, in November 1909, Walton's company sold the patch of swamp to the Park Board for roughly \$1,600 per acre, about two-thirds more than the price Walton originally paid. In doing so, Walton successfully exchanged undesirable swampland for waterfront acreage along a new canal, funded by city taxpayers, allowing him to fetch higher prices for the remaining parcels of the Walton Hills Additions (roughly \$10,000 per acre) (Correspondence and resolutions for acquisition of land in Walton Hills (Box 3 and Folder 4) 1909; Doc. No. 546437 (pg. 212) 546437 1909).

Walton added racial covenants to the deeds of Walton Hills Second Addition that ensured that this new waterfront real estate would be occupied exclusively by white residents. A 1919 advertisement makes Walton's strategy clear. A map of the development included in the advertisement highlights park amenities, proximity to Lake of the Isles, and the newly constructed canal, and the text at the bottom includes the language of the racial restriction, stating that a lot "shall not at any time be conveyed, mortgaged or leased to any person or persons of Chinese, Japanese, Moorish, Turkish, Negro, Mongolian, Semetic or African blood or descent." In other words, to maximize his profits at Walton Hills, Walton sold the promise of green amenities and white racial exclusivity.

Walton was deploying what were then seen as best practices in real estate. During this time, the NAREE heavily promoted both the value of green-space and "beautification" and the profit potential of racially segregated neighborhoods, relying on deed restrictions in lieu of city planning powers (Blake 1910; Nichols 1912). At the 1912 NAREE convention, Kansas City developer J. C. Nichols, who had



been using racial covenants on a large scale since at least 1908, famously declared, “in the early time I was afraid to suggest building restrictions; now I cannot sell a lot without them” (Nichols 1912, 460; Worley 1990).

Nichols’s speech at the 1912 convention was enthusiastically introduced by another Minneapolis real estate titan, Samuel Thorpe, then-president of the NAREE. Head of the city’s largest real estate firm, Thorpe was also a founding member and president of the NAREE from 1911 to 1912 and housed NAREE’s headquarters in his offices for several years, placing him at the center of the emerging national consensus around the principles of city land valuation (National Association of Realtors 2021).

In 1912, the same year of Nichols’s speech, Thorpe began work on the Nokomis Terrace Addition, deploying many of the strategies recommended by Nichols and used by Walton in Walton Hills¹ to transform thirty-two acres of low-lying marshy land into 182 lots characterized by picturesque pastoralism and race and class exclusivity.

The Nokomis Terrace Addition was nestled between the meandering Minnehaha Creek and verdant Minnehaha Parkway and was just blocks east of the Park Board’s newly opened park at Lake Nokomis and planned park and golf course at Lake Hiawatha. During this period, the Park Board was also acquiring land along Minnehaha Creek for a new park. In 1923, Thorpe sold forty-nine of the Nokomis Terrace Addition lots to the Park Board for a single dollar (Doc. No 1184684 (pg. 364) 1184684 1923). Rather than an act of altruism, this was in keeping with the emerging consensus among developers that setting aside land for new parks more than paid for itself in higher values for the remaining parcels (Watrous 1910). Thorpe took Edenic imagery at Nokomis Terrace further, partnering with the Minneapolis Garden Club to plant nearly 600 apple and cherry trees on lots (“Garden Club Orchards Grow” 1913). When asked about his promotion of the Garden Club among NAREE members, Thorpe replied simply, “It stands to reason that the more naturally beautiful a city is, the more people will want to live there, and the more valuable real estate will become” (“Every American City to Have Garden Club” 1911).

While securing these “natural” amenities—parkland, a tamed creek, and fruit trees—Thorpe also used deed restrictions to codify racial and class

exclusivity. Deeds banned multifamily residences, specified a \$2,000 minimum home construction cost—well out of reach for the city’s wage laborers—and barred sale to “any colored or other objectionable person or persons,” ensuring white homogeneity in perpetuity (Doc. No 684094 (pg. 207) 684094 1913). Nokomis Terrace Addition also marks the first time racial covenants were applied systematically to an entire development. This was in effect racial zoning, yet unlike citywide racial zoning ordinances that were ruled unconstitutional in 1917, segregation via individual real estate transactions remained legal until 1948 (Silver 1991). In the Nokomis Terrace Addition, Thorpe combined parks, water features, landscaping, and legal tools ensuring racial and class exclusivity to capture higher profits, a strategy that he—and other developers—would replicate for decades.

Enduring Inequalities

Although racial covenants have been unenforceable since the 1948 *Shelley v. Kraemer* Supreme Court ruling, our research shows that, along with other well-documented policies and lending practices that characterized mid-twentieth-century development in the United States, racial covenants have left an enduring imprint on the social and environmental geographies of Minneapolis. During the period from 1910 to 1955 in which racial covenants were used in Minneapolis, the Park Board added 1,163 additional acres, 73 percent of which had at least one racial covenant within 0.1 miles, roughly one city block, of the park (Figure 2, Table A.1). The majority of this new acreage was located in the southern part of the city, particularly near water features, where developers used covenants to rebrand the furthest reaches of the city, previously considered a swampy, provincial backwater, as a space of white exclusivity and natural beauty. Covenants span the banks of Minnehaha Creek, where the Park Board made substantial investments in channelization to control flow and prevent flooding. At Lake Hiawatha, covenants about the land that the Park Board converted from a wetland into an eighteen-hole golf course. At Diamond Lake, developers donated a patch of steep, undevelopable land to the Park Board to form a new lakeside park. As our archival research suggests, this pattern was not accidental but the result of intentional strategies adopted

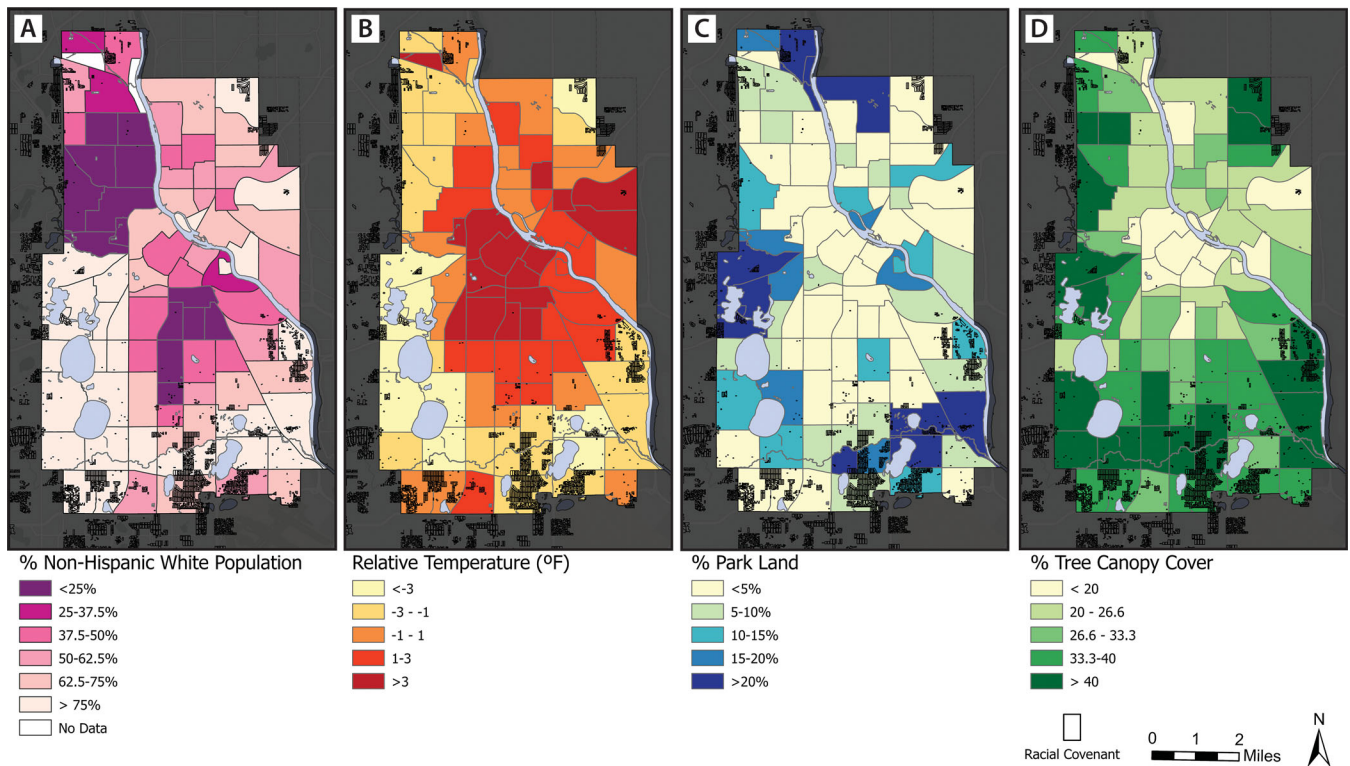


Figure 4. Environmental legacy of racial covenants. Variables averaged within neighborhood boundaries. Maps are overlaid with the map of racial covenants, with parcel boundaries drawn in black. Shaded areas are beyond Minneapolis city limits. Covenant data source: Mapping Prejudice. (A) Non-Hispanic white share of the population. Lighter colors indicate a higher share of the population identifying as non-Hispanic white on the census. Data source: U.S. Census Bureau (2020). (B) Average temperature, relative to the citywide mean temperature, in °F. Darker colors indicate hotter temperatures. Data source: LANDSAT 8 satellite data. (C) Percent park area, calculated as the sum of all park acreage located within the boundaries of each neighborhood, divided by neighborhood area. Data source: City of Minneapolis. (D) Tree canopy cover, calculated as the share of neighborhood land surface covered by tree canopy. Data source: Knight, Rampi, and Host (2017). Spatial lag regression models for temperature and park acreage are significant at $p < 0.05$.

by real estate developers to secure public investments in green amenities in their racially restricted developments.

Neither racial covenants, nor their use in concert with park development, were unique to Minneapolis. Ideas about engineering “desirable” nature and excluding “undesirable” people to boost property values were circulated widely through the NAREE (renamed the National Association of Real Estate Boards [NAREB] in 1916). In its 1925 guidance to local real estate boards written by secretary Herbert Nelson, a Minneapolitan and former leader of the Garden Club, the NAREB both recommended that developers track park improvements for potential development opportunities and issued a code of ethics instructing that realtors must “never be instrumental in introducing into a neighborhood ... members of any race or nationality, or any individual whose presence will clearly be detrimental to property values in that neighborhood” (Nelson 1925, 208).

These same principles were enshrined in federal policy. The Federal Housing Administration’s (FHA) underwriting manual explicitly tied both natural amenities and race to risk. Parks protected property values by providing recreation space and preventing the “infiltration” of “lower social occupancy” (FHA 1939, para. 935 and 953). Restrictive covenants served a similar role, preventing the “occupancy of properties except by the race for which they are intended” (para. 980).

Today in Minneapolis, neighborhoods where racial covenants were used are spaces of environmental privilege. A band encompassing the neighborhoods on the western edge of the city along the Chain of Lakes and to the south along Minnehaha Creek is overwhelmingly white and has less exposure to extreme heat, more park acreage, and increased tree canopy cover (Figure 4). Using spatially explicit regression modeling, we observe a correlation between race, temperature, and park acreage at the

neighborhood scale (Table A.2). This link is well-documented in Minneapolis. Numerous other studies of the relationship between wealth, race, and environmental outcomes that include Minneapolis in their data sets have found that, when controlling for class, communities of color face disproportionate exposure to extreme heat (Hsu et al. 2021) and tree canopy cover (Watkins and Gerrish 2018). Further, a study by Walker et al. (forthcoming) shows that exposure to extreme heat and urban tree canopy cover are significantly correlated with the historic presence of racial covenants. In other words, the history of housing discrimination in Minneapolis remains etched into the landscape.

Conclusion: Unnatural Landscapes of Environmental Privilege

With deed restrictions filed away and the tremendous earth-moving undertaken by the Park Board and Garden Club to transform the land long forgotten, Minneapolis's privileged environments, and the racialized access to them, might appear to be a "natural" feature of the landscape. Yet our case studies make clear that they are anything but. We illustrate how urban nature, development, and whiteness were coconstituted in a particular place and time and yet endure on the landscape today, shining new light on the production and maintenance of urban environmental injustices. Our archival work suggests a coupling between anti-Black racism and settler colonialism in the production of geographies of racialized exclusion, with implications for contemporary access to urban nature, pointing to the importance of further research into these links. By pairing racial covenants with urban greening campaigns, developers successfully produced a landscape of environmental privilege and exclusion in which Minneapolis's white residents had unbridled access to idealized green amenities, whereas people of color were concentrated into neighborhoods that received fewer and smaller parks, a pattern that persists in Minneapolis today. Racialized access to greenspace was built into the physical landscape and social structure of the city and persists long past the legality of racial covenants. The funneling of green amenities to racially restricted neighborhoods was enabled and legitimated by developers' collaboration with municipal partners, pointing to the role of state institutions in maintaining white supremacy and

producing landscapes of environmental inequality. This research underscores the importance of analysis of historic forms of racialization for understanding and remediating contemporary inequalities.

In the United States, the well-documented racial wealth gap—the vast and persistent gap between household wealth among Black and white people, reflected in Minneapolis's wide disparities between Black and white residents in income and homeownership (Currier and Elmi 2018)—is tied not only to racialized exclusion in the housing market but also to the systematic undervaluing and diminished appreciation of spaces marked as Black (Markley et al. 2020). New investments in urban nature were sold to a taxpaying public by the promise that these investments would increase local property values, value that ultimately accrued to the white homeowners who were able to purchase homes in the surrounding restricted neighborhoods. Sood, Speagle, and Ehrman-Solberg (2019) hypothesized that the increase in property values they observed with racial covenants can be explained, in part, by these properties' increased access to environmental amenities. While non-white residents were excluded from homeownership in much of the city, white residents were able to buy into environmentally privileged neighborhoods and accrue wealth through access to these amenities, contributing to Minneapolis's wealth gap.

This study highlights the centrality of idealized nature to the production and sale of all-white neighborhoods, with green amenities coupled with racial exclusion serving as the discursive material through which white racial identity was constructed (Lipsitz 2007). By pairing covenants and greening initiatives, urban nature became a tangible cultural hallmark of exclusive white neighborhoods. Today, when developers mobilize environmental amenities and green infrastructure to attract residents, they draw on the same imagery that historically was linked to the making of racialized difference (García-Lamarca et al. 2022). The racialized patterns of dispossession today driven by green gentrification can be understood as only the most recent manifestation of a long history of racial capitalism, operating through synergistic actions of real estate developers and city planners, mobilizing green amenities to attract wealthy white residents, at the expense of people of color (Safransky 2014; McClintock 2018). In the face of a deepening climate crisis in which

cities increasingly turn to greening to improve their resiliency, understanding the intertwined history of urban greening and racial exclusion is more relevant than ever to dismantle landscapes of racialized environmental privilege.

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Note

1. Thorpe and Walton had their own real estate firms but were also sometimes business associates—Thorpe served as treasurer of the Walton Hills Development Company—and very likely shared ideas about linking race and nature in creating stable value.

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Appendix

Spatial Data Sources and Analytical Methods

Spatial data for city, neighborhood, and park boundaries and acreage are from the City of Minneapolis. Racial demographics are from the 2020 U.S. Census data. Land surface temperatures (LSTs) are derived via Landsat 8 satellite data following accepted U.S. Geological Survey calculation protocol at a 30×30 m resolution using TIRS Band 10, Normal Difference Vegetation Index emissivity corrected LST. Water bodies were removed from temperature analysis. Tree canopy cover was assessed by Knight, Rampi, and Host (2017) at 1×1 m resolution using a combination of aerial imagery, LiDAR data, and ancillary thematic layers, integrated via machine-learning-assisted object-based image analysis. The tree canopy layer we use in our analysis includes all 1×1 m pixels classified as either coniferous or deciduous tree canopy.

We use ArcGIS Pro version 2.5 for spatial analyses and to produce map visualizations and R version 1.1.456 to run spatial linear modeling. We used nearest neighbor analysis to calculate the minimum linear distance between each park added from 1910 to 1955 and a property with a racial covenant, including covenants added both before and after the park opened. Each park's minimum distance to covenant was compared with the average distance of a city block in Minneapolis (0.1 mi) to determine whether each park was, or was not, within one block of a covenanted property. Acreage for the parks that had a covenant within this distance was summed and compared to the total acreage added.

We evaluate demographic and environmental variables using city neighborhood boundaries as our unit of analysis. To determine the value for demographic characteristics from census data, we calculate the spatially weighted mean for census blocks that intersect each neighborhood boundary. We test for spatial autocorrelation in our dependent variables using Moran's *I*. All dependent variables contain significant spatial autocorrelation, and so a spatial lag model, a type of spatial autoregressive linear model, is used to assess the relationship between the non-Hispanic white share of the population and our environmental variables.

Table A.1. New park additions to the Minneapolis Park System, 1910 to 1955, and their distance from racial covenants

Park name	Year park opened	Park area (acres)	Distance from park to covenant	Year nearest covenant	Years between park and covenant
Minnehaha Creek Park	1910	175.57	0.00	1916	6
Victory Memorial Parkway	1910	99.93	0.01	1940	30
Diamond Lake Park	1925	13.39	0.01	1946	21
Phelps Field	1917	7.83	0.01	1918	1
Kenny Park	1948	9.18	0.01	1921	-27
McRae Park	1947	8.36	0.02	1930	-17
Todd Park	1948	13.03	0.02	1946	-2
Armatage Park	1948	17.22	0.02	1916	-32
Shingle Creek Parkway	1948	27.87	0.02	1922	-26
Lake Hiawatha Golf	1934	171.62	0.02	1913	-21
Waite Park	1953	8.93	0.02	1947	-6
Bohanon Park	1935	8.68	0.02	1945	10
Bossen Field	1947	36.61	0.02	1927	-20
Brackett Field	1921	10.39	0.02	1933	12
Martin Luther King Park	1916	18.64	0.02	1925	9
Longfellow Park	1918	8.19	0.03	1942	24
Pearl Park	1925	29.12	0.03	1942	17
Bassetts Creek Park	1930	62.55	0.05	1938	8
Creekview Park	1951	32.06	0.05	1946	-5
Longfellow Gardens	1936	8.97	0.08	1924	-12
Bryn Mawr Meadows	1911	51.84	0.12	1938	27
Lake Hiawatha Park	1922	7.63	0.13	1924	2
Keewaydin Park	1927	4.12	0.14	1926	-1
Pershing Field	1923	8.51	0.14	1946	23
Hiawatha School Park	1931	4.09	0.14	1928	-3
Park Siding Park	1919	1.38	0.14	1941	22
Linden Hills Park	1919	7.92	0.21	1929	10
Lynnhurst Park	1921	8.26	0.30	1929	8
Sibley Field	1922	8.00	0.31	1938	16
Gross Golf Course	1925	150.16	0.37	1939	14
Deming Heights Park	1930	10.63	0.42	1949	19
Thomas Lowry Park	1923	1.45	0.45	1940	17
Washburn Fair Oaks Park	1915	7.43	0.46	1940	25
Northeast Athletic Field	1941	36.72	0.67	1941	0
Harrison Park	1960	6.85	0.69	1940	-20
Folwell Park	1917	26.68	0.69	1936	19
Clinton Field Park	1927	1.45	0.72	1940	13
Luxton Park	1912	4.37	0.76	1941	29
Peavey Park	1927	7.16	0.82	1940	13
Sumner Field	1911	4.23	0.98	1940	29
Cedar Avenue Field	1916	1.92	1.09	1941	25
Stewart Park	1915	6.33	1.12	1931	16
Hiview Park	1951	4.01	1.33	1949	-2
Perkins Hill	1948	3.08	1.55	1921	-27
Marshall Terrace Park	1914	7.06	1.74	1948	34
Bottineau Park	1915	6.63	1.77	1928	13
Holmes Park	1952	4.43	1.86	1918	-34
Dickman Park	1949	2.11	2.07	1941	-8
Total acreage 1910–1955		1162.6			
Acreage within 0.1 mi of covenant		845.7 (73%)			

Table A.2. Model results for spatial lag model

Model: % Non-Hispanic White ~ LST					
OLS					
	Var. estimate	SE	Var. <i>p</i> value	Adj. <i>R</i> ²	Model <i>p</i> value
	-4.861	1.148	< 0.001	0.168	< 0.001
Moran's <i>I</i>					
				Statistic	<i>p</i> value
				0.571	0.001
Spatial autoregressive					
Estimate	SE	<i>p</i> value	Rho	Rho <i>p</i> value	Log-likelihood
-1.96	0.793	0.013	0.8	< 0.001	-169.841
Model: % Non-Hispanic White ~ Park area					
OLS					
	Var. estimate	SE	Var. <i>p</i> value	Adj. <i>R</i> ²	Model <i>p</i> value
	0.722	0.223	0.002	0.1	0.002
Moran's <i>I</i>					
				Statistic	<i>p</i> value
				0.222	0.001
Spatial autoregressive					
Estimate	SE	<i>p</i> value	Rho	Rho <i>p</i> value	Log-likelihood
-0.56958	0.224	0.011	0.312	0.047	-447.49
Model: % Non-Hispanic White ~ Tree canopy					
OLS					
	Var. estimate	SE	Var. <i>p</i> value	Adj. <i>R</i> ²	Model <i>p</i> value
	14.669	4.715	0.003	0.09	0.003
Moran's <i>I</i>					
				Statistic	<i>p</i> value
				0.499	0.001
Spatial autoregressive					
Estimate	SE	<i>p</i> value	Rho	Rho <i>p</i> value	Log-likelihood
6.401	3.351	0.054	0.778	< 0.001	-293.834

Note: *n* = 83. LST = land surface temperature. The positive significant value for Moran's *I* indicates that spatial clustering among our dependent variables (i.e., neighborhoods with cooler temperatures, higher tree canopy, and more park acreage tend to be near to other neighborhoods with similar environmental conditions). As such, a simple ordinary least squares (OLS) model is insufficient to test for significance due to the lack of independence among the dependent variable, and instead, we use spatial lag models to test the significance of the relationship between neighborhood racial demographics and environmental variables. Spatial lag regression models for temperature and park area are significant at *p* < 0.05.