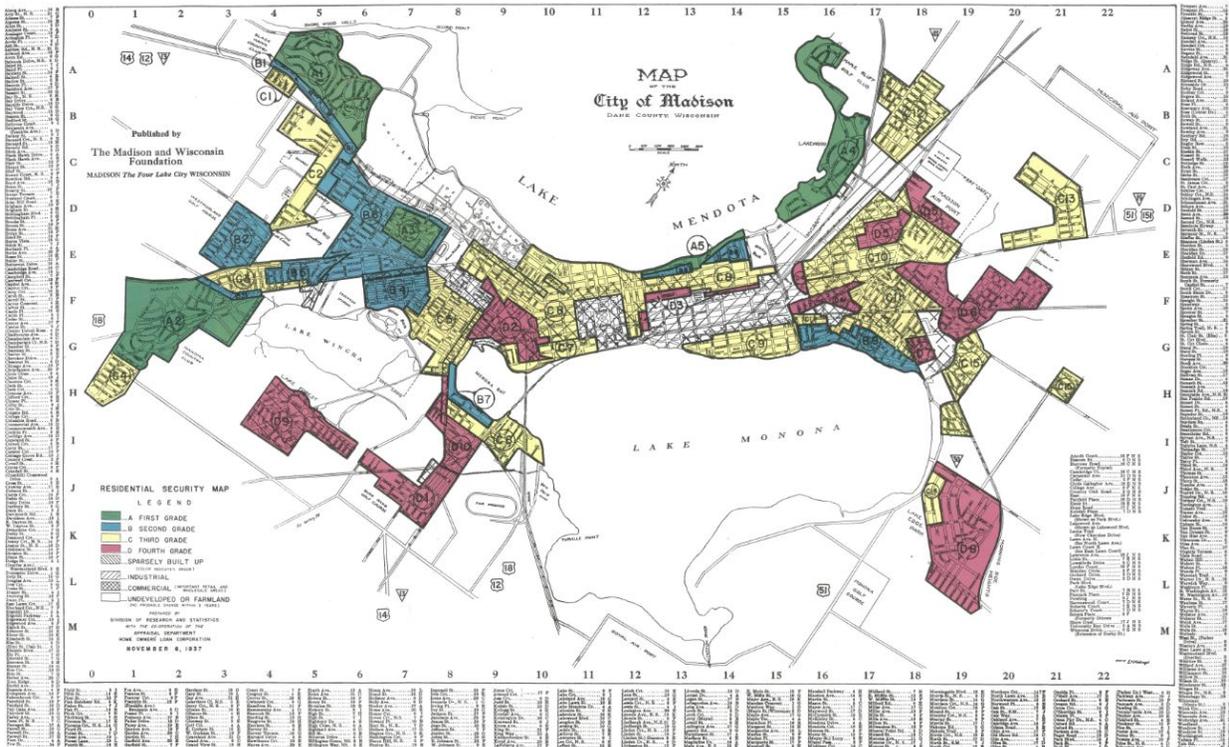


# The Legacy of Redlining in Madison, Wisconsin

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## - ABSTRACT -

Redlining can be described as the process of color-coding a map to determine which neighborhoods should receive financial investments - including home loans - and which ones should not. This was encouraged by the U.S. government and carried out by the Home Owners' Loan Corporation during the Great Depression as an effort to make more economical investments. Much has been written about the long-term effects of this practice, namely, segregation and racial inequality. Milwaukee, Wisconsin is an infamous example of redlining and segregation, yet little attention has been given to the state's capitol. A city known for its progressive values, Madison is one of 239 U.S. cities that was red-lined by the Home Owners' Loan Corporation. In this paper, we will demonstrate how redlining has impacted the city of Madison after more than 80 years. We will explicate how redlining worked, introduce a qualitative background of race relations in Madison, and perform a spatial analysis of modern loan data to develop our argument.

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## - INTRODUCTION -

In 1935, the United States government tasked the Home Owners' Loan Corporation (HOLC) with creating "residential security maps" for 239 cities. These maps were made with the objective of providing lenders with information about which neighborhoods were the most desirable to invest in. The maps later became infamous for their color-coded scheme. Neighborhoods were outlined using a color scale from green to red: green for neighborhoods considered best for investments and red for the neighborhoods that were deemed high-risk. The discriminatory effects of this practice eventually became apparent as the colors in these maps were shown to closely mirror the divide in racial demographics between neighborhoods (Krimmel 2017, 2). The communities outlined in red were often denied any sort of loans or investments to improve the housing of residents. Madison, Wisconsin was one of the cities that experienced this decades-long practice known as "redlining." We are seeking to understand if the discriminatory neighborhood evaluations made by the Home Owners' Loan Corporation have left a legacy of segregation and disparate outcomes in the neighborhoods of Madison. To what extent do modern mortgage lending patterns resemble the 1937 red-lined map of Madison?

After creating a digitized version of the original 1937 map, we can analyze the socio-economic information from these neighborhoods in the present day. Census tract data such as race, income, and housing makeup will be extracted from Social Explorer; mortgage lending data will be obtained from the Federal Financial Institutions Examination Council's (FFIEC) website. As the red-lined map of Madison is from the late 1930's, we will have to research how migration impacted the modern-day racial makeup of Madison. A large part of our research will be archival as we unearth the history of how the Home Owners' Loan Corporation and other

agencies that red-lined Madison determined which neighborhoods were undesirable. We will also research a general history of redlining in other small cities. Our final analysis will include a modern day map of lending data in Madison which we will use to compare to the 1937 HOLC map.

### **- LITERATURE REVIEW -**

Through this literature review we hope to provide an in-depth look at the context and history of redlining in Madison. We will start by giving an overview of African-American migration to the Madison area, then discuss the history of the Home Owners' Loan Corporation and the creation of their red-lined maps. Finally, we will explore several different theoretical frameworks offered by scholars and briefly look at case studies of other red-lined cities, both of which will be relevant to our analysis of Madison.

Much of our research, as well as the research contained in this literature review, is archival. As Alan RH Baker explains in his paper "The Dead Don't Answer Questionnaires: Researching and Writing Historical Geography," this poses several issues. Unlike natural scientists or social scientists, historical geographers cannot make any direct observations about the phenomenon they wish to study. They cannot set up controlled experiments. However, Baker goes on to say: "While the intangibility of the past imposes limitations upon historical enquiry, the inevitable distancing of the historical geographer from the object of study theoretically permits a greater degree of impartiality than might otherwise be the case" (Baker 1977, 232).

## Historical Context: Madison's African-American Populace

In 2018, Michelle Robinson published her dissertation “Racial Inequality in the Land of Plenty: Black Life in Madison, Wisconsin.” In this work, she attempts to explain the paradox of wide racial disparities in (what is perceived as) a progressive city by examining the history of Black life in Madison. Rather than focusing directly on redlining, Robinson discusses the history of Madison’s “culture of discrimination and exclusion” (Robinson 2018, 42). Black populations in Wisconsin remained very small but steadily increased after the passing of the Emancipation Proclamation. Most migrants were drawn to Milwaukee and Racine as it was the era of the Industrial Revolution and these were major manufacturing cities.

The 1940’s marked a turning point as World War II drew to an end and the Great Migration truly began for Wisconsin. Southern Blacks were migrating north, at least doubling Wisconsin’s Black population with each decade. Madison’s total population alone nearly doubled between 1950 and 1970, though this was largely driven by white migrants (Robinson 2018, 49). Since many white migrants to Madison were from small towns, they had never encountered a Black person in their life. With the University and strong public sector, Madison was a major attraction to whites and Blacks alike. However, the percent of Blacks in Madison still remained relatively low because of the steady rate of white in-migration.

Madison’s geographic growth (through land annexation) was driven by the growing population’s need for space. It was not until 1960 that the city’s Black population reached 1% of the total population (Robinson 2018, 50). Between 1960 and 1980, the Black population increased by 209%; between 1980 and 2010, the Black population increased by 268% (Robinson 2018, 53). Notably, at the same time that Black populations were exponentially rising at the end

of the 20th century, Hispanic and Asian populations were rising even faster. Today, each minority group makes up similar proportions of Madison's population, around 7 percent each (Robinson 2018, 58).

Despite the lack of white flight, which occurred acutely in Milwaukee, Madison still utilized racial zoning which impacted where Blacks could reside. Robinson identifies *proximity* as a key feature of northern racism: "whites' racial politics were characterized by resistance to residing near Blacks" (Robinson 2018, 44). In 1940, 80% of the Black population lived in just three out of Madison's twenty wards, concentrated on the South Side near industrial zones. Robinson identifies the main Black neighborhood as Greenbush - or the Triangle - which was bounded by West Washington, South Park, and Regent. This neighborhood was well-mixed with other minorities, primarily Jewish and Italian immigrants. Another small Black concentration existed on the near-east side bounded by North Blair, East Dayton, East Mifflin, and Williamson Streets (Robinson 2018, 51). This red-lined area can be seen in the 1937 HOLC map just east of the capitol.

Robinson cites William Thompson's book which finds that African-Americans surveyed in the 1940's and '50's perceived Madison as the friendliest city in Wisconsin. At the same time, the Black population reported a lack of adequate housing and employment (Robinson 2018, 51). African-American experiences in Madison during the second half of the 20th century were recorded in an oral anthology called *Settlin': Stories of Madison's Early African American Families* by Delores Simms Greene (Davidoff 2019). *The Isthmus* featured the anthology in an article titled "Madison's Black Pioneers" and interviewed the author, who expressed, "I never got the sense that anybody was harassed or bothered here in Madison. No houses were burned

down, they were not lynched... That helped them decide to stay here and work through whatever they needed to, with housing and education and jobs. I didn't hear any word like 'fear' in their interviews." The article includes several excerpts from the anthology of interviews with Madison's long-term African-American residents, each of whom speak of the overt racism they did face. Discrimination in employment and housing was normal. One interviewee, who lived in the Greenbush neighborhood, remarked, "[Hell's Half Acre]... didn't have water or electricity; streets weren't paved, no curbs or gutters; it flooded. When we had a storm or some environmental crisis, we were the last to get serviced" (Davidoff 2019). Robinson notes that Blacks were grouped alongside other racialized whites including Jews, Italians, and Polish citizens and speculates that this could have created a buffer against more extreme racism (Robinson 2018, 52).

The Black population in Madison has continued to increase in recent decades, rising 50% between 2000 and 2010. Yet, the majority of African-Americans in Madison continue to live in isolated, perimeter neighborhoods (Hall 2013). It is worth noting that the first Black migrants were most likely drawn to the industrial zones for employment. Madison was not a major employment destination like Milwaukee and Racine. In earlier years, Madison was much less densely populated and had plenty of space for white residents, who were unlikely to reside near noisy and polluted industrial sites. Maps created by the HOLC would, in turn, redline these areas due to the lack of desirability for whites. This made it easier for Blacks to find housing in industrial neighborhoods as very few whites would have lived there.

## The Home Owners' Loan Corporation (HOLC)

The Federal Home Loan Bank Board (FHLBB) was established in 1932 and essentially ran the entire federal banking system, which included the HOLC (Woods 2012, 1037). As part of the New Deal under the Roosevelt administration, the federal government created the HOLC during the Great Depression to slow the skyrocketing rate of home foreclosures. The HOLC was created on June 13, 1933 with bipartisan support and can be thought of as the “direct lending and appraisal arm of the FHLBB” (Woods 2012, 1038). Home foreclosure was so bad during the Great Depression that the FHLBB reported that “from January 1, 1929 to December 31, 1933, there were 9,755 bank suspensions.” (Woods 2012, 1037). By 1933 “urban foreclosures had reached the unprecedented height of nearly 1,000 a day” and in that year alone, 4,000 banks had closed (Woods 2012, 1037). The HOLC brought sweeping changes to American mortgage financing. Before the HOLC, mortgage loans had short durations that were considered ‘balloon payments’. This means that after paying a mortgage for a few years, there still was a final, relatively large sum of money to be paid off. The HOLC introduced duration loans (between 15 and 20 years) that fully amortized after the pay period (Aaronson et. al 2019, 6). Between 1933 and 1955, the HOLC supplied over 3 billion dollars for over a million mortgages. One in ten of all owner-occupied, non-farm residences had mortgage loans from the HOLC (Jackson 1980, 421).

The HOLC was tasked with refinancing home mortgages that were in danger of default and granted low-interest rates. In 1935, the FHLBB, the parent organization to the HOLC, created a program for which the HOLC staff - in addition to local lenders and realtors - would appraise the real estate risk level in 239 cities. The FHLBB insisted that home financing

institutions adopt the ‘scientific appraisal’ techniques used by the HOLC (Woods 2012, 1041). This task led to the widespread use of institutionalized racist tactics in mortgage lending and created the infamous ‘red-lined’ security maps.

In the 1930’s the federal government concluded that “faulty property appraisals were among the most important issues that ... had placed the entire national banking system in peril” (Woods 2012, 1040). This is precisely what the HOLC aimed to remedy. HOLC staff used evaluations and data from local real estate professionals in each city to create their maps. Residential neighborhoods were assigned grades that reflected their ‘mortgage security.’ Among the data that was used to assign the ‘grade’ of security was the neighborhood’s quality of housing, the history of sale and rent values in the area, and the racial, ethnic, and class identity of the residents of that neighborhood (Breen 2019). These assessments were color-coded on maps in which neighborhoods given an ‘A’ ranking were colored green, while neighborhoods given a ‘D’ rating were outlined in red. If the HOLC appraised a neighborhood as an ‘A’ grade it would be deemed worthy of mortgage loans and investment while neighborhoods that received a ‘D’ ranking were considered ‘hazardous’ to invest in.

As it turns out, neighborhoods with any minority or immigrant groups at all were almost always given a ‘D’ rating. Aspects that would make a neighborhood be considered ‘undesirable’ by the HOLC included: the presence Jews, Italians or Chinese people; heterogeneous (mixed) populations; low-income residents; and poor housing quality. The purpose of the HOLC was to provide accessible mortgage loans to Americans, but the HOLC determined who should be provided loans based on the race or ethnicity of people in the neighborhood more so than the quality of the housing itself. The FHLBB believed that a neighborhood’s racial and ethnic

makeup was a better determination of a neighborhood's decay than the age of the properties in that area. The FHLBB stated that "many dwellings and neighborhoods [are] ... well over 30 years old and still pleasant and satisfactory places to live, and some newer ones are already slums." The FHLBB believed that a neighborhood's decline was because of "the infiltration of lower income families, and the remedy... is to keep such families out" (Woods 2012, 1048). This was because FHLBB policy makers believed that "the neighborhood factors deserve special weight in measuring risk, for a dwelling is primarily at the mercy of its surroundings" (Woods 2012, 1043). The conspicuous racism can even be seen in the Federal Housing Association's *Underwriting Manual*. The second page of the manual states that "The Valuator should investigate areas surrounding the location to determine whether or not incompatible racial and social groups are present, to the end that an intelligent prediction may be made regarding the possibility or probability of the location being invaded by such groups. If a neighborhood is to retain stability, it is necessary that properties shall continue to be occupied by the same social and racial classes. A change in social or racial occupancy generally leads to instability and a reduction in values" (Federal Housing Authority 1936, 2). Provisions such as these were a common way to prohibit Black occupancy. The rationale behind redlining was extended to defend active housing discrimination.

By the time the HOLC had become defunct, they had made over 5 million appraisals (Woods 2012, 1041). The standards of the HOLC influenced the underwriting policies of the Federal Housing Authority by negatively defining the existence of non-white and poor inhabitants in neighborhoods that were looking for mortgages and mortgage insurance (Woods 2012, 1038). These discriminatory policies were practiced for decades because "in the 1930's

and 1940's, there were virtually no legal obstacles to lending discrimination. Redlining - not yet given a name - was simply considered to be good business" (Hillier 2003, 395). "The damage caused by the HOLC came not through its own actions, but through the influence of its appraisal system on the financial decisions of other institutions" (Jackson 1980, 430). The physical maps *along with* the standards and practices of institutionalized racism within the framework of the American housing system would leave an indisputable impact on the residents of those neighborhoods well into our current times.

The language used by the HOLC to justify a neighborhood's security rating was excruciatingly and blatantly racist. For example, a neighborhood in Pasadena, California was red-lined under the justification that, "this area is favorably located but is detrimentally affected by 10 owner occupant Negro families" and that "it seems inevitable that ownership and property values will drift to lower levels" because of these families (Woods 2012, 1047). An appraisal of Boyle Heights, Los Angeles states that the neighborhood was "literally honeycombed with diverse and subversive racial elements. It is seriously doubted whether there is a single block in the area which does not contain detrimental racial elements, and there are very few districts which are not hopelessly heterogenous" (Woods 2012, 1047). This was written simply because the neighborhood exhibited racial and ethnic diversity. Another example can be seen in this description of a Mexican neighborhood in Los Angeles, in which the HOLC description reads that there was an infiltration "of goats, rabbits and dark skinned babies" and that "like the 'Army mule,' it has no pride of ancestry nor hope of posterity. It is a typical semi tropical countryside 'slum'" (Woods 2012, 1047). It is inarguable that the HOLC used profound and explicit racism in their evaluations of neighborhoods when creating their residential security maps.

While there is debate among scholars about how often the HOLC security maps were used and how widely spread they were, it is not debatable that neighborhoods that were “red-lined” do not fare as well as their non-redlined counterparts in metrics such as current home value, amount of vacancies, and the number of home demolitions. Daniel Aaronson argues that the HOLC red-lined maps had “an economically meaningful and lasting effect on the development of urban neighborhoods through reduced credit access and subsequent disinvestment” (Aaronson et. al 2019, 0). Aaronson is able to show the effects of redlining by looking at the rate of FHA mortgage loans as well as private loans in low-graded neighborhoods before and after the creation of the HOLC maps (Aaronson et. al 2019, 1). Another tactic these authors used to assess the impact of redlining was to look at neighborhoods and properties that were just barely inside or outside of a red-lined zone. They found that properties that were in the red-lined zone fared worse than their counterparts that were just outside that zone (Aaronson et. al 2019, 2). Lastly, they took advantage of the fact that the HOLC only made security maps of cities greater than 40,000. This allowed them to compare cities that had populations from 30,000 to 39,999 people and compare those to red-lined cities that had roughly 40,000 people. They found that the cities with the HOLC maps had declines in home ownership, house values, and rents (Aaronson et. al 2019, 4).

According to a 1952 study by the Housing and Home Finance Agency (HFFA), it has also been found that as time progressed, yellow and red-lined areas experienced a disproportionate number of demolitions (Rutan 2016, 5). Appel et al. (2016) found that red-lined neighborhoods had a 4.9% lower home price in the year 1990 than homes in adjacent neighborhoods. They also state that red-lined areas have 8-12% more vacant lots and a 3-5%

lower rate of home ownership (Appel 2016, 0-3). It is estimated that the HOLC maps may account for 40% of the gap in home values between 1950 and 1980 (Aaronson et. al 2019, 4). The extreme racial prejudice that was used in the HOLC security maps led to low-income whites being given the same mortgage lendings as neighborhoods with the most educated African-American communities (Woods 2012, 1044). Another example of this is that Fisk University and Meharry Medical School, two prestigious and historically Black colleges with stable property values, were given the lowest possible rating by the HOLC (Woods 2012, 1044). Notable journalist Martin Nolan wrote in 1967 regarding the policies of the FHA that “the imbalance against poor people and in favor of middle-income homeowners is so staggering that it makes all inquiries into the pathology of slums seem redundant” (Nolan 1967, 446). Louis Lee Woods succinctly writes that lending biases “prohibited entire segments of the nation from taking full advantage of the housing opportunity that their socioeconomic status should have provided” (Woods 2012, 1048).

### Perceptions and Debates on the Home Owners’ Loan Corporation in Academia

Nearly every academic would agree that the HOLC exacerbated the practice of redlining, but the extent to which redlining existed before is subject to much debate. Kenneth Jackson, a professor of history and social sciences at Columbia University, was the first to publish research linking the HOLC maps and racial discrimination. His 1980 article was later included as a chapter in his book *Crabgrass Frontier*, which focused on the suburbanization of the United States. Jackson argues that the HOLC developed real estate appraisal systems that discriminated against racial and ethnic minorities and against older, industrial cities. He claims that the Federal

Housing Administration cooperated with the HOLC, followed the HOLC's appraisal practices, and acted on the information in its files—clearly favoring suburban areas over industrial cities.

In contrast, Amy Hillier refutes many of these claims and downplays the role of the HOLC in her paper *Redlining and the Homeowners' Loan Corporation*. Hillier analyzes the residential security maps that were made by the HOLC and seeks to challenge the idea that those maps impacted mortgage lending patterns. Hillier makes numerous arguments to counter Jackson's ideas. Among them is the fact that lenders were avoiding certain areas even before the HOLC created maps and that few lenders even had access to the maps after they were created. Hillier does an analysis of mortgage lending in Philadelphia in the years following the creation of the maps and finds that lenders did not categorically refuse to make loans in red-lined neighborhoods, nor did they provide loans with considerably different terms (with the exception of interest rates). To be clear, she does not refute the existence of redlining, she simply argues that redlining had existed before the creation of the HOLC, and the HOLC maps essentially codified existing segregation onto paper maps.

These debates are manifestations of a key concept in the field of geography: the difference between a *prescriptive* map and a *descriptive* map. Manuel Aalbers explores this idea in his 2014 article "Do Maps Make Geography?" and lays out succinct definitions and examples of each. A city district may make a prescriptive map, for example, that might "show when which type of garbage is collected in which neighborhood. This is intended to be a performative map: the city district hopes that my neighbors and I will put the garbage out on Tuesday night or Wednesday morning, but not on any other day" (Aalbers 2014, 526). Prescriptive maps like these are created with the specific intent of shaping the environment that they are mapping, even if it is

just in a small way. Kenneth Jackson's research about the HOLC maps concludes that they are *prescriptive*; that is to say, the creation of these maps influenced lenders' practices and created a system of institutional racism and inequality. On the other hand, Hillier's paper argues that these maps were merely *describing* conditions of the time and had no malintent hidden in them.

Aalbers tends to side with Jackson's theory; he makes the case that city maps which distinguish between different types of neighborhoods will influence how these places are perceived and "shape the actions not only of public but also of private institutions." Thus, "a mortgage lender that views a neighborhood on a city map that is described as 'houses have little or no value', 'dying', 'to be depopulated' or 'distressed', may decide not to grant any loans in that neighborhood" (Aalbers 2014, 526). The majority of scholars agree with this conclusion and much of the research indicates that these maps had a very noticeable negative effect in the development of these red-lined neighborhoods.

The extensive research that has been done on redlining in the United States points towards the conclusion that all red-lined maps are both descriptive *and* prescriptive. That is to say that the maps created by the HOLC did describe certain on-the-ground socio-economic data such as race and income; however, as Jackson and Aalbers point out, the maps also influenced the lending practices of financial institutions. On top of restrictive covenants that prevented minorities from moving out of a red-lined district, these institutionalized practices perpetuated segregation and disinvestment in communities composed of minorities.

There is another nuanced debate which arises between our sources about the extent to which redlining affected reality. Foltman and Jones (2019) argue that redlining, as practiced by the HOLC, was a key influence in segregation and racial disparity. Robinson (2018), on the other

hand, focuses on socio-political trends and individual actions that set the framework for racial inequality.

In her dissertation “Black Life in Madison,” Robinson highlights “moments of racial politics in action to illustrate that approaches and responses to Black citizenship in Wisconsin were neither determinate nor destiny” (Robinson 2018, 62). She references Joseph Ranney, who argued “Wisconsin never countenanced de jure discrimination, but de facto segregation and discrimination were common” (Robinson 2018, 61). That is, segregation as a result of private practices and discrimination was common, but not law or government policy (Rothstein 2017, 1). According to Robinson, the first civil rights law in Wisconsin was passed in 1895, when a judge ruled that all persons had equal rights to public spaces and there would be a penalty for violations. Thus, there was no legal basis for racial discrimination in public spaces in Wisconsin. Robinson argues that *choice* and *agency* were imperative factors in the perpetuation of segregation and inequality. “This ‘choice’ has served to facilitate city authorities’ and landlords’ exclusion of Blacks in the absence of laws directly legislating such exclusion” (Robinson 2018, 64). Thus, racially exclusive housing covenants were practiced and employers could discriminate at will. Up to fourteen restrictive covenants were found in the Madison, Monona, and Middleton area (Robinson 2018, 83). Robert C. Weaver wrote, “intense resistance to the concept of Negro neighbors was usually concentrated in given neighborhoods. It became widespread only after the professional advocates of enforced residential segregation had spent much time and money to propagandize its necessity and desirability” (Robinson 2018, 81). That is, propagandists aimed to manipulate already racially-anxious whites who were eager to climb the economic ladder, helping form housing covenants.

In contrast to Robinson, Foltman and Jones focus on the direct results redlining had on neighborhoods and African-American populations, albeit in Milwaukee. They argue that the maps created by the HOLC directly affected bank policies on lending. Where local discriminatory policies were absent, Black people were still denied mortgages by banks because of red-lined maps. This restricted where Black people could move and created the mold for segregation and long-term neighborhood deterioration. This is evident in that many neighborhoods which were “yellow-lined” (perceived as declining) and *did not* have a Black population at the time are now comprised of significantly larger Black populations (Breen 2019). This argument is also supported by the fact that few Black people lived in Madison during the time of the HOLC’s neighborhood assessments. The HOLC likely had red-lined pre-existing industrial zones comprised of working-class immigrants such as Italians, Poles, and Jews that arrived prior to African-Americans from the South. By the time the majority of African-Americans arrived, the neighborhoods they were able to move to were already well-established.

### Long-Term Effects of Redlining: Case Studies

#### *Sacramento*

A modern day case study that looks at the long-term effects of redlining in Sacramento was published in 2009. It looks at some of the current discriminatory lending practices that are still happening in low-income and minority neighborhoods (Hernandez 2009, 2). In the present day, redlining exists in the form of subprime lending—mortgage credit with interest rates *substantially* higher than normal. Subprime lenders target borrowers who have poor credit histories. His research suggests that subprime lending is highly concentrated in minority

neighborhoods. The combination of historical discriminatory housing policies with contemporary ones such as subprime lending has prevented many neighborhoods from seeing any sort of improvement over the years.

### *Milwaukee*

Milwaukee is infamously one of the most segregated cities in the United States. As discussed by Robinson, the majority of Wisconsin's African-American migrants settled in industrial Milwaukee, triggering white flight. Fearful of living next to Black people, newly-created white communities fought with the city of Milwaukee to keep their suburbs from being annexed. White neighborhoods formed race-restrictive housing covenants, which were eventually made illegal by the Civil Rights Act. Milwaukee's demographics today eerily match the red-lined map produced by the HOLC. Some areas which were coded yellow for "declining" had no minority populations at the time but today are majority African-American. This could be explained by the notion that the HOLC maps and revised lending practices *encouraged* white flight to the suburbs, where white citizens were more likely to get financial assistance and achieve home ownership. Meanwhile, red-lined zones of Milwaukee "faced increasingly inadequate living conditions and poorly funded education systems; were more likely to be in closer proximity to environmental hazards; and were often further away from adequate shopping, medical and other social services. A host of urban issues, such as crime, policing, housing quality, taxes and education opportunities, took on distinct racialized contexts" (Foltman et al. 2019). The extra investment given to white suburbs was literally drawn out of inner-city Milwaukee, where ethnic minorities and working class citizens were concentrated. This has been shown to have directly impacted racial inequality and economic disparity in Milwaukee today.

## - METHODS -

The goal of our research is to compare the lending patterns caused by the red-lined maps in the 1930's to the lending patterns that we see in Madison today. We will start our research by digitizing the 1937 map of Madison made by the Home Owners' Loan Corporation. After this, we will obtain loan data from the Federal Financial Institutions Examination Council's (FFIEC) website, which includes loan data broken up by census tract for Dane County.

With the modern-day loan data from the FFIEC, we will look at two specific fields in this data: total applications received and total denials. We will use these two fields to calculate a new value for each tract, called Percent Denied, representing the percent of loan applications that were denied in a tract. Since we are interested in replicating the HOLC map, we must color-code our data into four ranks/colors in the same manner. After getting loan denial data for all the tracts in Dane County, we will then divide these new values into quantiles: the lowest 25% of values (i.e. the tracts that had the fewest proportions of loans denied) will be assigned a value of *Green*, the next 25% will be assigned *Blue*, etc. The lowest quarter will be *Red*. These tracts with a value of *Red* represent the areas in Madison that have the highest proportion of loan applications being denied in 2018. Our final result will be a modern-day map of Madison demonstrating areas that currently experience disproportionately higher rates of loan denials by lenders.

Boundaries change all the time, meaning we will need to assess which modern day census tracts best fit over the areas defined by the 1937 HOLC map. The HOLC map seems to have been split up arbitrarily, at the discretion of the experts hired to conduct the appraisals, loosely based on neighborhood boundaries at the time. Since there was no particular method to classify these areas—such as by census tract—there will not be an exact match using the data

and boundaries that are available to us. Therefore, after obtaining the modern-day loan data from the FFIEC (which gives us data for *all* of Dane County), we will perform a simple intersect between the two layers to ensure that we are only comparing areas that were originally ranked in the 1937 HOLC map.

This will give us the result of two “red-lined” maps: from 1937 and 2018. We will then perform a qualitative analysis of changes that we see in neighborhoods. For instance, we expect to see certain neighborhoods that became gentrified later in the 20th century increase in their color rank, since these areas became more desirable for lenders to invest in.

In addition to having loan data broken up by census tract, the FFIEC has loan data broken up by race and income, which we will analyze as well. Using a similar technique - calculating the percent of loan applications denied for each group - we will compare differences in the amount of loan applications denied between Black and white residents in Dane County.

## **- RESULTS -**

Below is the red-lined map of Madison produced by the Home Owners’ Loan Corporation from 1937. The red areas were labeled “hazardous” for lenders. The yellow areas were deemed “declining,” and the green/blue areas were considered “best.” This map was an integral part of our research question. The map also informs our analysis of modern neighborhoods.

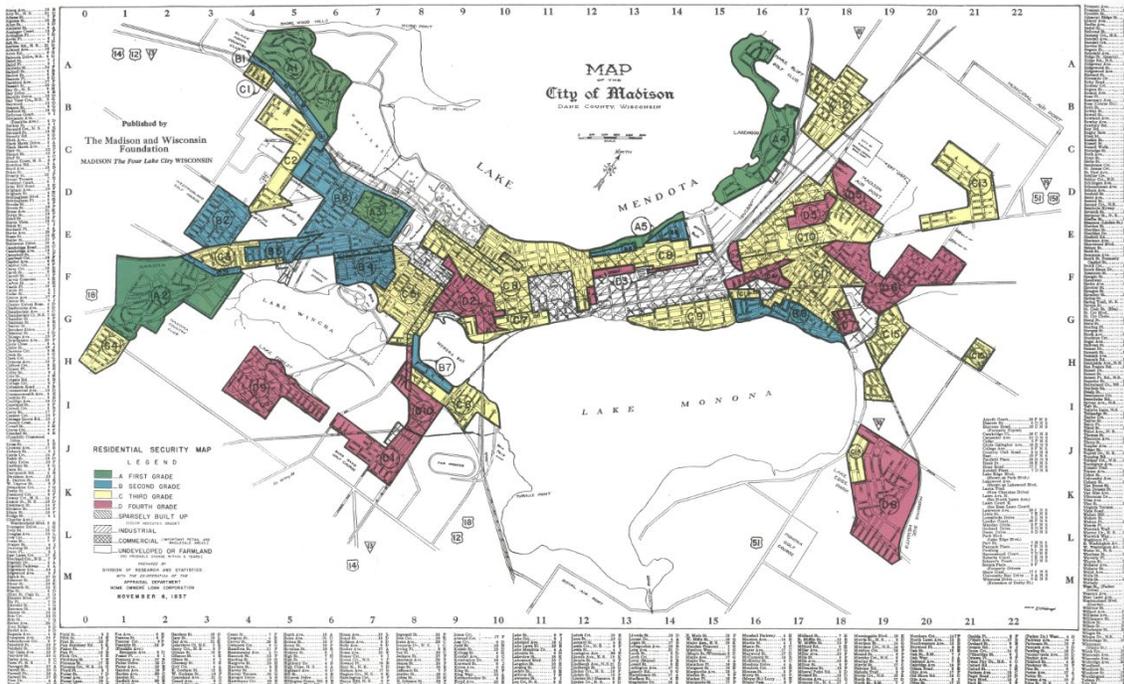


Figure 1.1 Redlining Map of Madison, Colbert 2018

One issue with this map is the fact that it does not have a coordinate system. It is, essentially, a sketch of Madison. The colored areas do not match any modern census tracts. This is partly due to the fact that redlining was accomplished using on-the-ground speculators who ranked neighborhoods on a block-by-block basis. As discussed in our literature review, neighborhoods with any Black residents were almost invariably given a ‘D’ rating and subsequently colored in red.

In order to compare this map to new, geographically-accurate maps of Madison, this image must be uploaded into a Geographic Information System and given a reference system. In other words, it must be digitized. This step is shown in Figure 1.2.

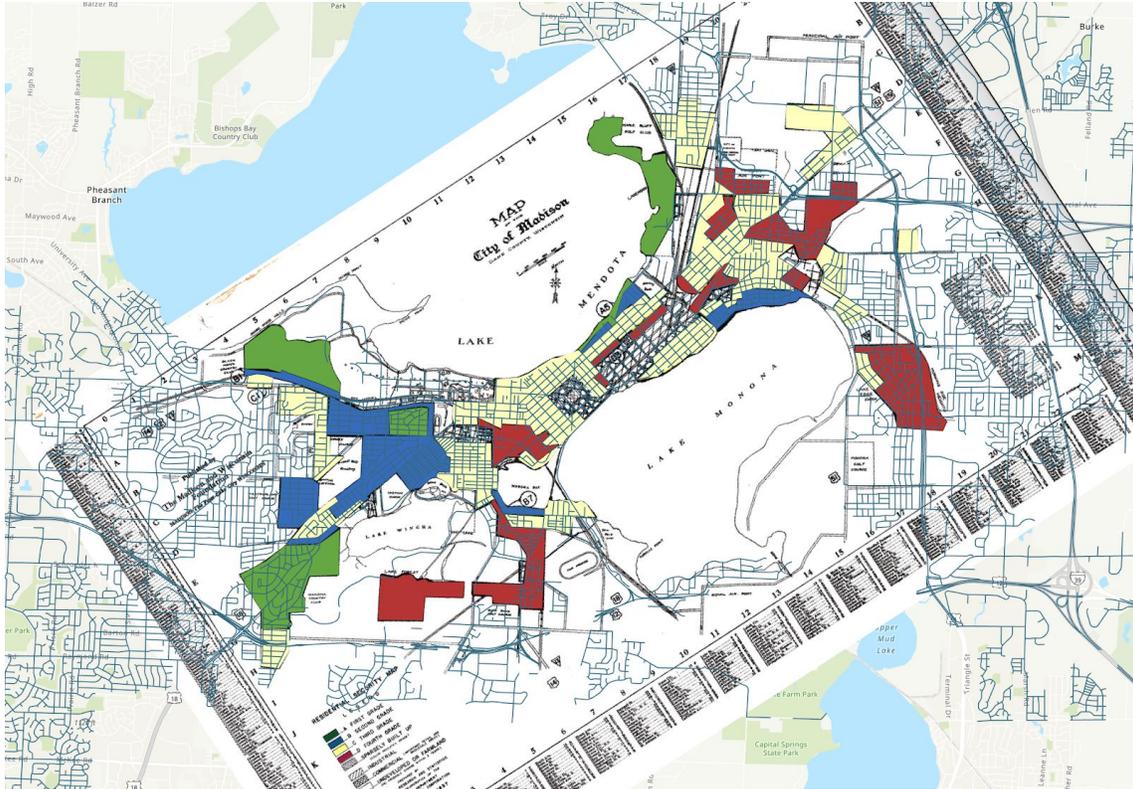


Figure 1.2 Redlining Map of Madison, Digitized

Here, the red-lined map has been rotated so that north is properly oriented; it is georeferenced as accurately as possible using a shapefile (layer) of Madison streets. Points on each map were identified and correlated in order to overlay the maps. Additionally, each neighborhood that was ranked by the HOLC has now been converted into a polygon--the result of this is the creation of a new layer that outlines each of these boundaries. This step will make it easier to overlay modern loan data onto these same areas. The next step is to create our modern-day version of the red-lined map.

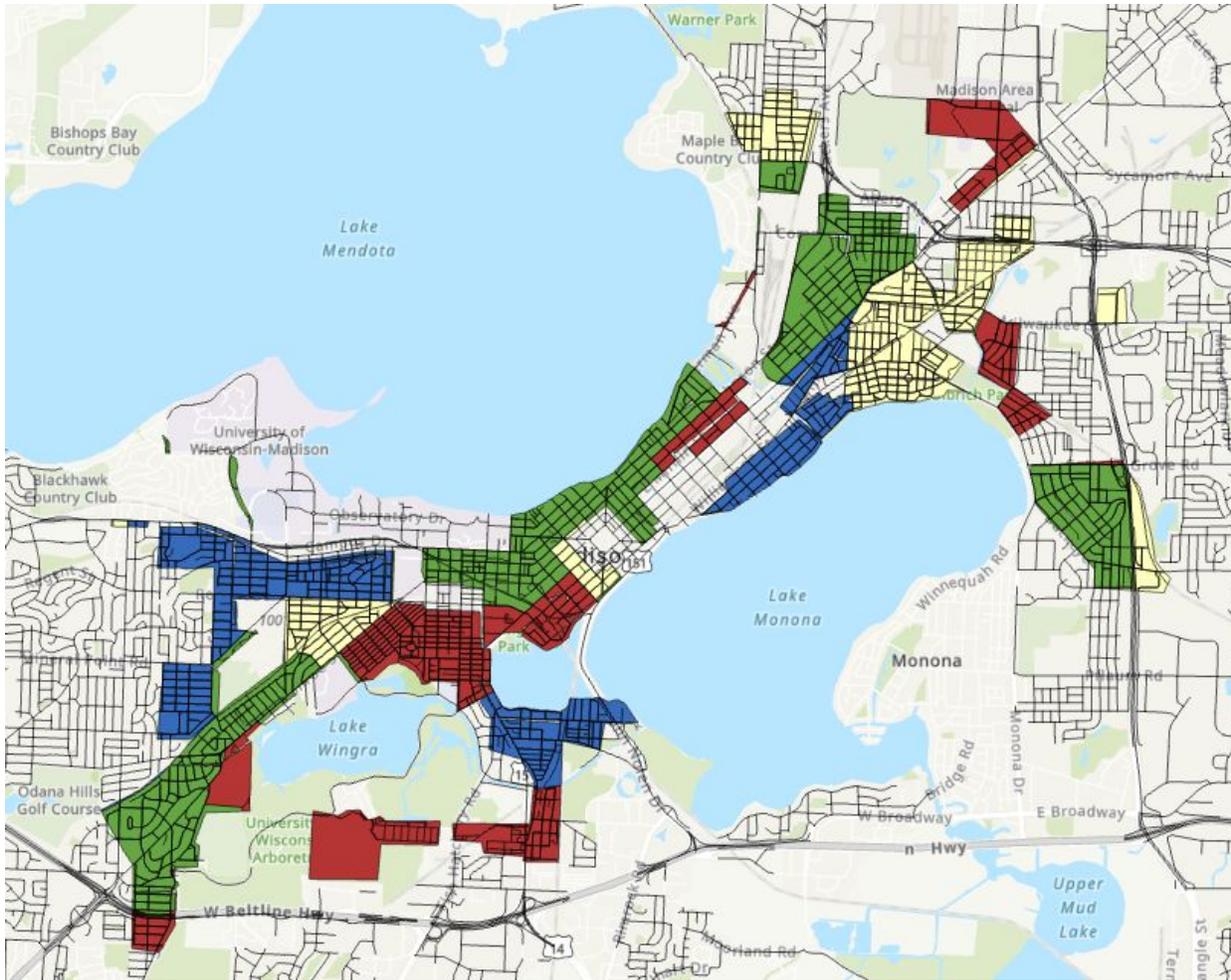


Figure 1.3 2018 Red-lined Map of Madison

The Federal Financial Institutions Examination Council’s (FFIEC) website includes loan data broken up by census tract for all of Dane County. Using the layout from the digitized red-lined map of Madison, we inserted the 2018 loan data layer, dividing the areas into quantiles based on the percentage of loan applications that were denied. The colors represent the quantile that an area belongs to, with the best to worst ordered as follows: green, blue, yellow, red. The quantiles were broken up as follows: under 2.7% of loans denied were assigned green; 2.7% - 3.4% of loans denied were assigned blue; 3.4% - 5.9% of loans denied were assigned yellow; above 5.9% were assigned red.

It should be noted that loan data for the entirety of Dane county was obtained; the areas that appear to be unclassified/unranked on this map (white areas) *do have data*, yet they were deliberately chosen to be represented as unranked. We chose to do this to ensure that we are only including areas that were also ranked in the original 1937 HOLC map. A full list of data for all the census tracts in Dane county is included in the appendix.

*Loan Data by Race*

Income:	Race:	Applications Received:	Applications Denied:	Percentage Denied:
<b>Less Than 50% of MSA/MD Median</b>				
	White	2969	734	24.72%
	Black	84	36	42.86%
<b>50-79% of MSA/MD Median</b>				
	White	5641	687	12.18%
	Black	160	45	28.13%
<b>80-99% of MSA/MD Median</b>				
	White	1984	148	7.46%
	Black	29	5	17.24%
<b>100-119% of MSA/MD Median</b>				
	White	5045	413	8.19%
	Black	101	21	20.80%
<b>120% or More of MSA/MD Median</b>				
	White	10014	609	6.08%
	Black	112	16	14.29%

Figure 2.1 *Loan Data by Race*, FFIEC 2018

Figure 2.1 represents loan data collected by the Federal Financial Institutions Examination Council. Shown is aggregate mortgage lending data by race and income for Madison, Wisconsin. We have calculated the percentage denied for each grouping.

- ANALYSIS -

Percent of Loan Applications Denied, By Race (2018)

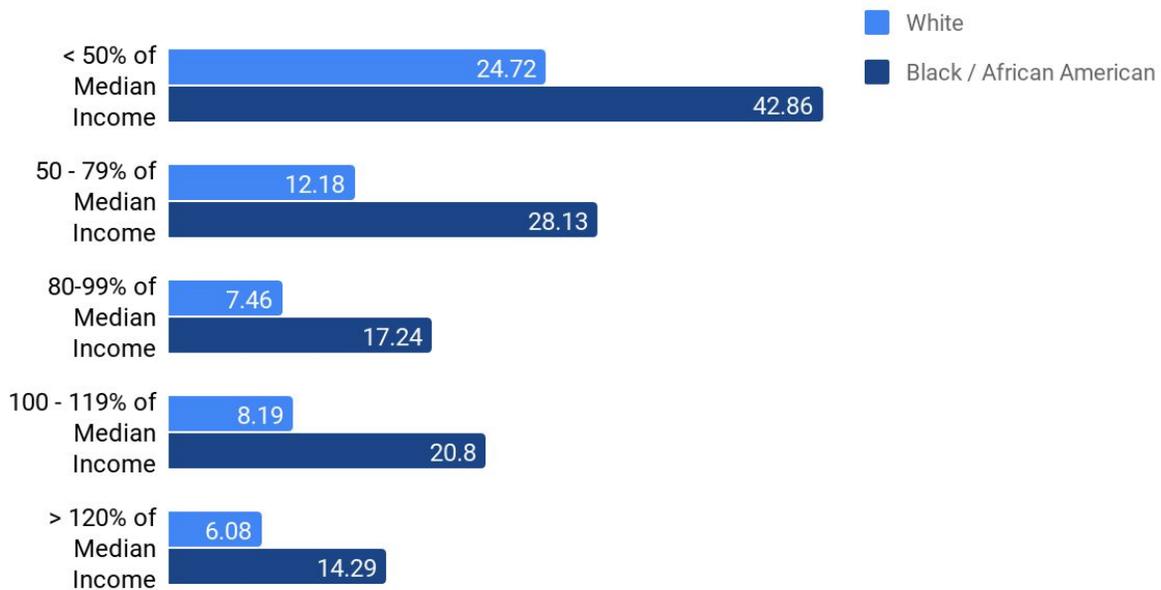


Figure 2.2 Percent of Loan Applications Denied by Race , FFIEC 2018

The figure above represents loan data collected by the Federal Financial Institutions Examination Council (Figure 2.2), represented as a bar graph. It again shows aggregate mortgage lending data by race and income for Madison, Wisconsin. It is clearly visible that loan applications from African-Americans/Blacks are denied at roughly twice the rate of that of whites, regardless of income.

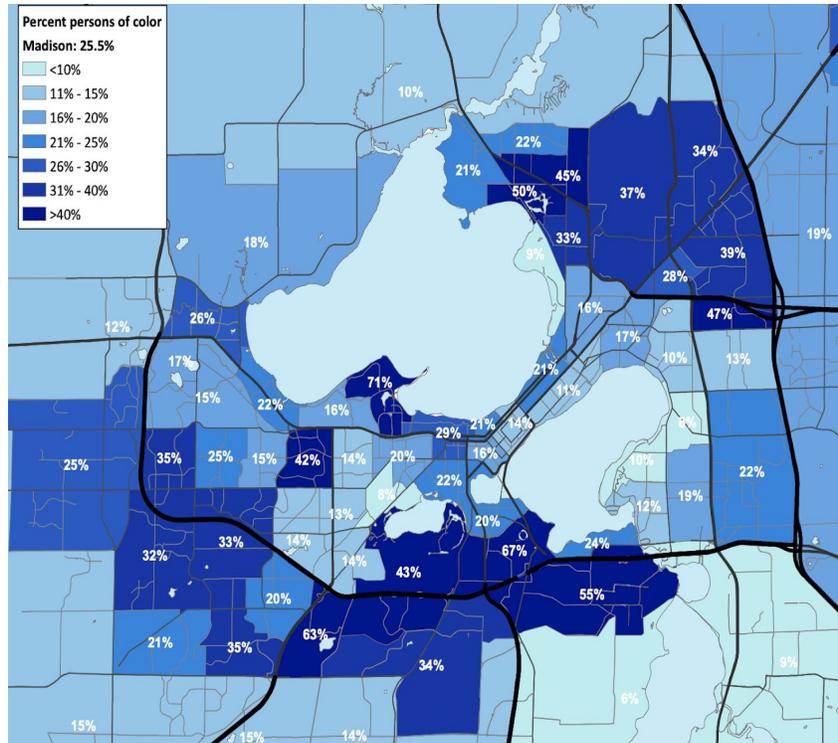


Figure 3.1 *Percent Persons of Color, City of Madison Planning Division 2019, 7*

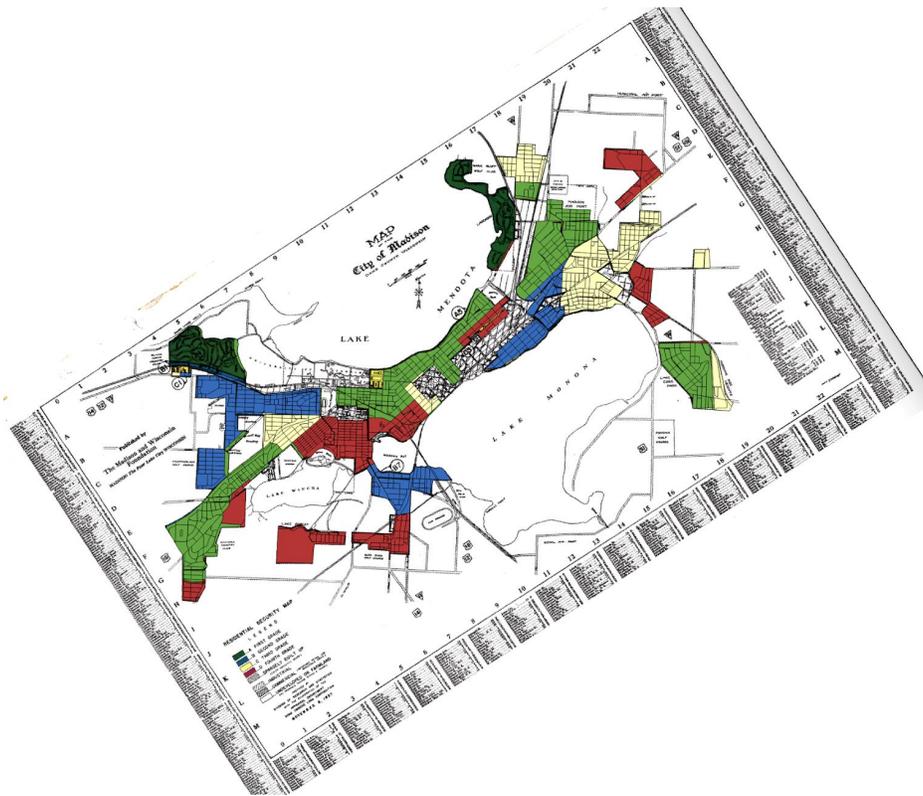


Figure 1.3 *2018 Red-lined Map of Madison (repeated for comparison purposes)*

When looking at Figures 1.3 and 3.1, there seems to be a relationship between census tracts that have high rates of loan denial and census tracts that are disproportionately people of color compared to the rest of Madison. This can clearly be seen in the neighborhoods directly southeast of Lake Wingra. Neighborhoods such as Burr Oaks have disproportionately higher levels of loan denial and a higher non-white population than the rest of Madison.

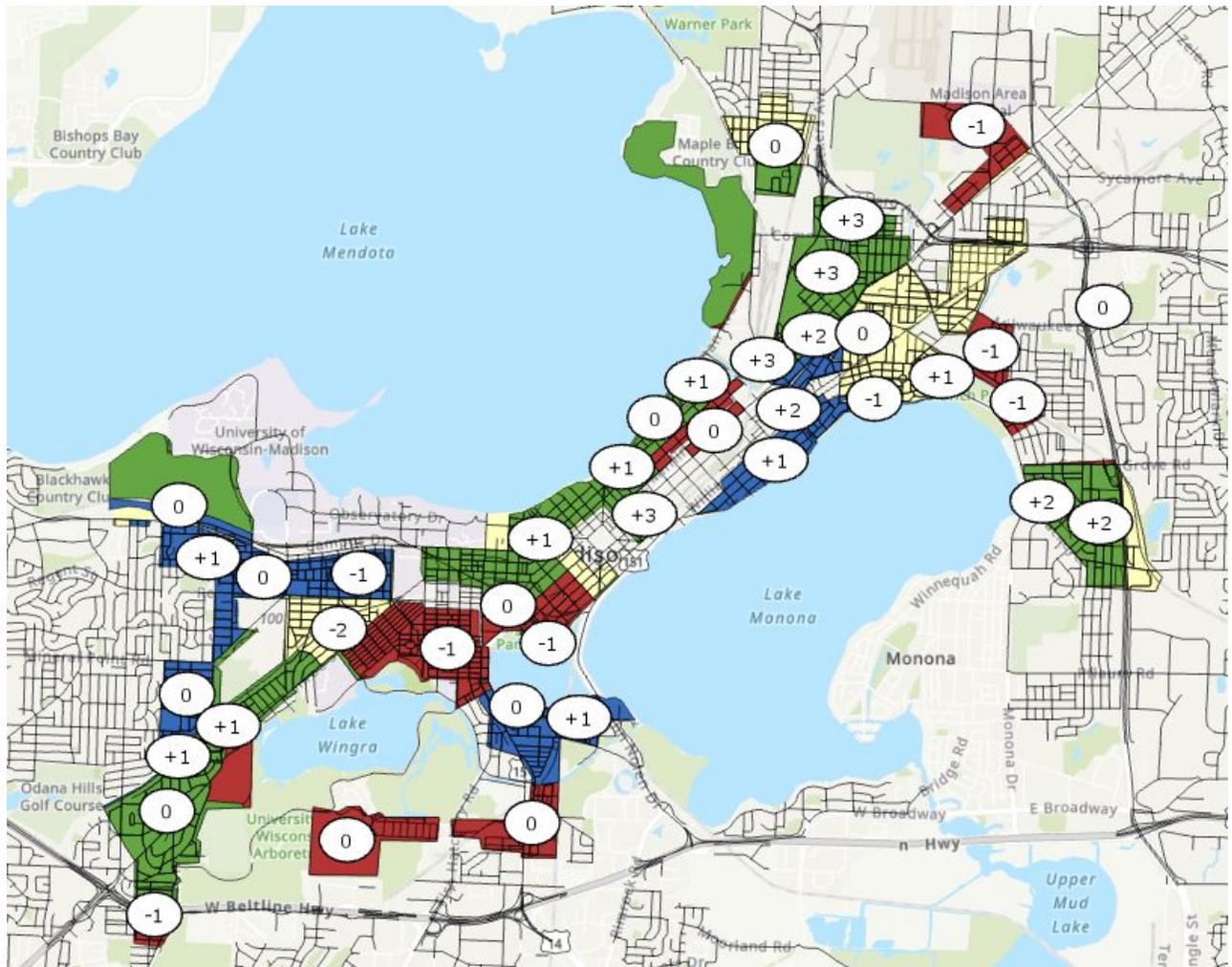


Figure 1.4 Mapping Change: 1937 to 2018

This map is the same as Figure 1.3, but with labels over each tract to show the change in rank that each tract has when being compared to the 1937 HOLC map. A label of +1 indicates the area has gone up a rank whereas -1 indicates that the area has gone down a rank. For

instance, the Willy Street area was originally given a rank of yellow in the 1937 HOLC map. In our 2018 map, which uses modern loan data, we found that it is now a blue rank. Therefore, this area has been labeled with a +1, since the rank increased by one level. A more detailed qualitative analysis of specific neighborhoods, some that did change ranks and some that did not, can be found in the next section.

### Neighborhood Case Studies

Using Social Explorer, a website dedicated to census-drawn demographic data in the United States, we can comment on the way that redlining and mortgage lending practices have impacted neighborhoods in Madison. Census tract boundaries have changed numerous times since the Home Owners' Loan Corporation created a red-lined map of Madison, requiring a certain amount of "eye-balling." However, the yellow gradient from red-lined maps have made it easier to explain variation over space (such as how yellow areas adjacent to blue- or red-lined districts have since changed color). This (randomly-colored) map of Madison's neighborhoods assists in identifying specific subdivisions that were red-lined as well as the corresponding modern census blocks.

For example, the location of the Bay Creek neighborhood appears to match the blue-lined zone in our *2018 Red-lined Map of Madison* (Figure 1.3). In Social Explorer, this neighborhood corresponds to census tract 13, block groups 1 and 2. Just south of Bay Creek is the Burr Oaks neighborhood, which matches a red-lined zone from the *2018 Red-lined Map of Madison*. Burr Oaks corresponds to census tract 14.01, block groups 2 and 3.

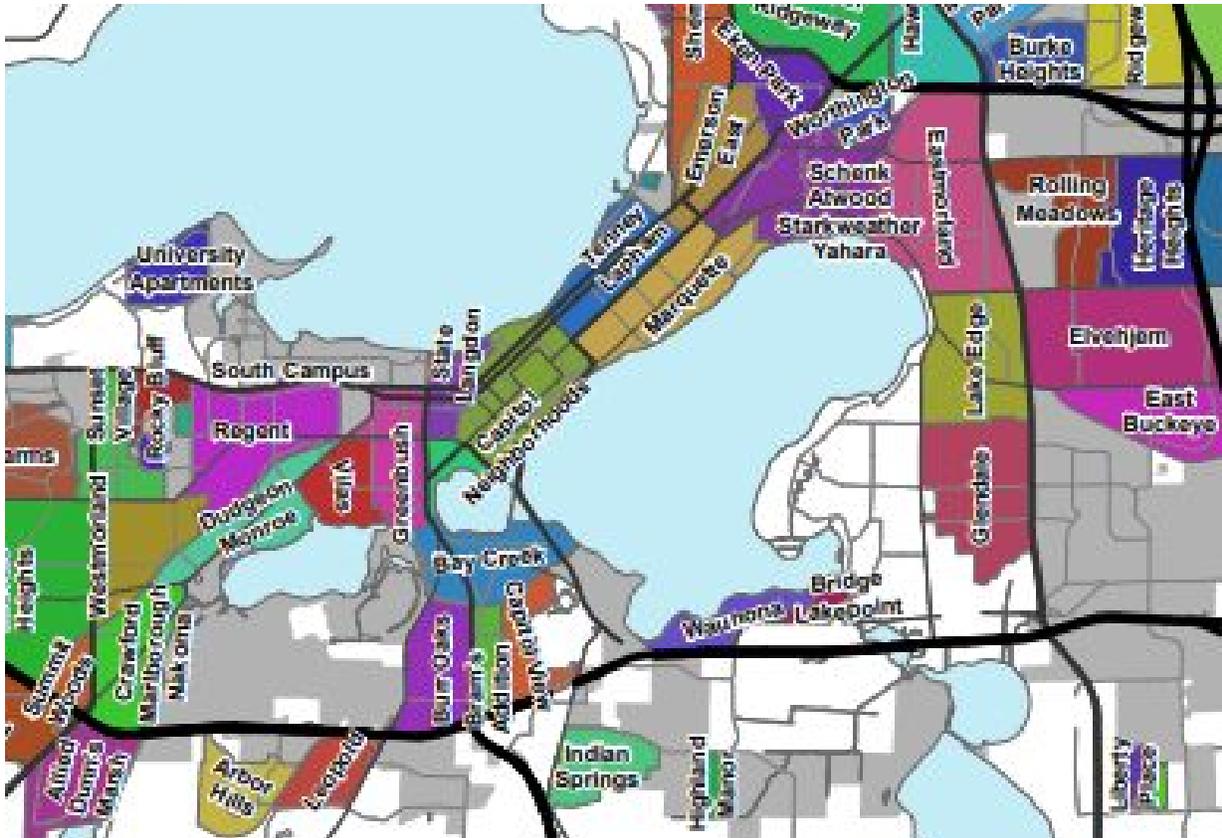


Figure 4.1 *Madison Neighborhoods*, City of Madison Planning Division 2019, 5

Today, Bay Creek scores high on the percent of mortgage loans that are requested and granted compared to adjacent neighborhoods. According to our research, loans have improved in this area, evident by the fact that the blue-lined part of the neighborhood has expanded to include the previously adjacent yellow-lined zones.

The shorefront area that the Bay Creek neighborhood contains is identifiable in the 1937 HOLC map as it was blue-lined. Lakefront real estate in the Bay Creek neighborhood was clearly suitable for development and was likely denoted as desirable property far before 1937, when the land was originally surveyed. The map shown in Figure 1.3 matches Bay Creek neighborhood boundaries quite closely. Race-restrictive covenants, which were introduced around 1900 in

Wisconsin (Robinson 2018, 80), as well as redlining, most likely contributed to the formation of the Bay Creek neighborhood as a majority white and middle class subdivision.

The demographic composition of Bay Creek in 2017 (census tract 13) was roughly 82% white, 4% Black, and 9% Hispanic/Latino. The average family income was about \$96,000. Just over half of the homes were renter-occupied. 58% of the population have at least a Bachelor's degree and 33% have a master's degree. 5% of families lived below the poverty level.

A basic qualitative survey of a neighborhood is possible through Google Maps. In the case of Bay Creek, it is evident that the neighborhood has several large, open parks as well as the Goodman Pool. The lawns are well-kept and often feature gardens and fences. There exists one private Montessori school as well as Franklin Elementary, each of which boasts diversity as one of their main goals. At Franklin, 69% of the students are white, 9% are African-American, and 7% are Hispanic/Latino. 25% of students are low-income and receive free or reduced lunch (Franklin School Profile 2019, 3).

Just south of Bay Creek is known as the South Park Street neighborhood, which is actually made up of various subdivisions. Burr Oaks is one identifiable subdivision within the region (colored purple). Burr Oaks is red-lined on both the 1937 HOLC map and marked as red on our new *2018 Red-lined Map of Madison* (Figure 1.3). About 80% of households live in rented housing across the entire neighborhood. Burr Oaks is 40% white on average, and the proportions of Latino/Hispanic and Black/African-American populations vary between block groups 2 and 3. For the sake of clarity, I will average the overall percentages. Roughly 22% are Black/African-American and 32% are Hispanic/Latino. The average income is about \$48,000. Averaged between the two block groups, above 16% of residents in the area live in poverty.

One of the largest contrasts is education: block group 2 contains Madison College, explaining its 36% of the population that has at least a Bachelor's degree compared to a mere 3% in the larger portion of Burr Oaks. Zero percent of the population have a master's degree in block group 3, compared to 10 % in block group 2.

Lincoln Elementary and Wright Middle are schools found in Burr Oaks. Respectively, they have 40% and 48% Hispanic/Latino students, 32% and 11% White students, and 10% and 27% Black or African-American students. The majority of students are low-income and receive free or reduced lunch (Lincoln School Profile 2019, 2); (Wright School Profile 2019, 2).

#### **- DISCUSSION -**

Though our *2018 Red-lined Map of Madison* shows interesting results and points us to areas that may be subject to modern-day forms of redlining, it was made only by considering one factor--the percentage of applications denied--which may not provide us with the entire story. Our map that revealed modern lending data was created based on the percentage of loan denials in each tract. In reality, redlining, and discriminatory credit practices in general, can take multiple forms. Sometimes, people in red-lined neighborhoods *were* unfairly denied loans at higher rates; other times, loans were provided but they had exorbitantly high interest rates; other times, banks avoided these areas altogether. Since our research only takes into account application denials, we are only able to look at areas that were subject to this exact type of lending discrimination.

In August of 2019, the City of Madison Planning Division published a report titled *Equitable Development in Madison*. The report discusses factors that influence Madison

neighborhoods' susceptibility to gentrification - namely, economic vulnerability, demographic change, and housing market conditions. The southern and periphery regions of the city have significant signs of disinvestment and segregation. The report identified economically vulnerable populations by mapping concentrations of: rental housing units, persons of color, families below the poverty level, and populations without a college degree (City of Madison Planning Division 2019, 6). The multiple maps produced in this report follow the same distinct trend from the red-lined 1937 HOLC map as well as our *2018 Red-lined Map of Madison*.

According to the report, in terms of educational attainment, “Allied Drive and South Park Street have the lowest rates in the city, with nearly every adjacent tract double their rates” (Equitable Development in Madison 2019). The Burr Oaks neighborhood, located in the heart of the South Park district, certainly fits this criteria. Directly west, south and southeast of Burr Oaks, the concentrations of rental housing, persons of color, and populations with a degree only increase. While not all of these neighborhoods were in the original 1937 map of Madison, the trend appears to have continued with Madison's growth.

The Bay Creek neighborhood was originally mapped as a mix of red, yellow, and blue-lined blocks (Figure 1.1). This indicates the neighborhood was quite literally mixed given the way that red-lined maps were formulated (any person of color at all would bring down the ‘grade’ of a street block). Despite the desirability of the lake-shore property, Bay Creek was likely far enough away from the university, and Madison's population was perhaps small enough that African-American and other ethnic minority migrants could afford to settle in the area. However, over time the Bay Creek neighborhood grew to be a desirable suburb for Madison's well-to-do white families.

It is evident that there is a relationship between the 1937 HOLC red-lined map of Madison, the modern racial makeup of neighborhoods, and current lending patterns. Due to the lack of reliable loan and mortgage data from the 1930's, we are unable to put an exact number on the strength of this relationship. However, through a qualitative analysis of a few specific neighborhoods, the effects of redlining seem to have been detrimental to some neighborhoods and less so to others. It is hard to tell the true extent of lasting damage by the HOLC redlining maps on neighborhoods of Madison. While some of the neighborhoods that were red-lined have struggled with poverty, food deserts, and issues with home ownership, others seem to have fared well in recent years. What is certain is that besides the racial segregation that was legally carried out by the HOLC, modern-day lending practices seem to be egregiously racially skewed. This begs the question "is 'redlining' still happening in Madison today?" This is a question that requires further investigation into the factors that determine which recipients are granted loans and what the criteria for those decisions are.

#### **- CONCLUSION -**

When looking at the effects of redlining on modern lending practices in Madison, Wisconsin, the findings are varied. Modern loan denial rates vary greatly by neighborhood, and it is hard to make an overall claim about what happened to places that were red-lined. While certain red-lined neighborhoods continue to struggle with higher loan denial rates and high levels of poverty, other neighborhoods that have undergone an urban renewal process, leading to certain areas becoming gentrified and presumably more desirable for lenders to invest in. Despite all this, it is certainly evident that there is clear discrimination along racial lines in modern

lending. Modern discriminatory lending practices are something that requires further research and attention.

**- APPENDIX -**

Loan Data by Census Tract for Dane County, 2018

CENSUS TRACT	TOTAL APPLICATIONS	PERCENT DENIED LOANS
000100	61	0.06557377
000201	47	0.042553191
000202	46	0
000204	71	0.028169014
000205	97	0.041237113
000300	54	0.055555556
000401	71	0.028169014
000402	34	0.029411765
000405	115	0.052173913
000406	93	0.021505376
000407	118	0.076271186
000408	2	0
000501	78	0.025641026
000503	142	0.049295775
000504	185	0.064864865
000600	66	0.090909091
000700	74	0.027027027
000800	68	0.029411765
000901	26	0.038461538
000902	58	0.034482759
001000	51	0.019607843
001101	2	0
001200	62	0.064516129
001300	34	0.029411765
001401	39	0.153846154
001402	79	0.075949367
001403	163	0.061349693
001501	38	0.131578947
001502	81	0.135802469
001603	1	0
001604	0	0

001605	23	0.086956522
001606	5	0
001704	93	0.053763441
001705	36	0.027777778
001802	44	0.022727273
001804	61	0.081967213
001900	87	0.034482759
002000	148	0.047297297
002100	108	0.027777778
002200	102	0.039215686
002301	34	0.117647059
002302	32	0.09375
002401	70	0.071428571
002402	66	0.090909091
002500	32	0.4375
002601	34	0.058823529
002602	126	0.063492063
002603	84	0.047619048
002700	108	0.064814815
002800	56	0
002900	48	0.041666667
003001	119	0.042016807
003002	36	0.055555556
003100	131	0.053435115
003200	1	0
0010100	32	0
0010200	43	0.046511628
0010300	74	0.040540541
0010400	44	0
0010501	126	0.023809524
0010502	220	0.027272727
0010600	108	0.12037037
0010701	140	0.035714286
0010702	244	0.045081967
0010800	271	0.022140221
0010901	280	0.028571429
0010903	162	0.043209877
0010904	178	0.04494382
011000	77	0.012987013
011101	77	0.012987013
011102	181	0.027624309

011200	255	0.043137255
011301	148	0.013513514
011302	60	0.083333333
011401	303	0.02970297
011402	340	0.032352941
011503	210	0.042857143
011504	110	0.072727273
011505	71	0.042253521
011506	170	0.052941176
011600	234	0.051282051
011700	90	0.066666667
011800	105	0.076190476
011900	153	0.045751634
012001	170	0.029411765
012002	95	0.052631579
012100	58	0.068965517
012201	38	0.026315789
012202	164	0.024390244
012300	147	0.06122449
012400	91	0.010989011
012501	131	0.030534351
012502	147	0.054421769
012600	72	0.041666667
012700	75	0.04
012800	167	0.053892216
012900	54	0.055555556
013000	82	0.06097561
013100	106	0.08490566
013200	271	0.036900369
013301	124	0.032258065
013302	103	0.067961165
013700	179	0.072625698

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