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Environmental Racism in a Growing City: Investigating Demographic Shifts in Salt Lake City's Polluted Neighborhoods

Emma Jones

Utah State University

Mariya Shcheglovitova

Utah State University, mariya.shcheglovitova@usu.edu

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Emma Jones¹, Mariya Shcheglovitova¹
¹ Utah State University, Department of Environment and Society, Logan UT 84322

Abridged Abstract

We aim to contribute to research on environmental racism by asking how relationships between race and hazard exposure change over time. We analyze American Community Survey (ACS) demographic data from 2010 and 2019 to determine whether census tracts with high densities of EPA environmental hazard sites have a growing, shrinking, or unchanging proportion of Latinx residents. We argue that racist planning practices effectively weave environmental racism into the fabric of cities and that cities with growing communities of color must consider how existing spatial patterns of segregation may perpetuate exposure to environmental harms.

Background

Salt Lake City (SLC), UT, USA is one of the largest cities in the intermountain west and is expected to see continued population growth. SLC was 99% white from 1860-1950, but 2019 census estimates indicate that SLC is becoming more racially diverse with 35.6% of the population identifying as racial categories other than "white alone." Latinx people represent the largest proportion of SLC's growing racial diversity (21.2%). Utah's historic Latinx communities were comprised of Mexican immigrants that came to the state in the 1880s and 1890s due to the expansion of the railroads. They became a critical part of Utah's workforce, working on railroads, mines, farms, and ranches across the state.

Following the Great Depression the US federal government implemented "mortgage redlining" guidelines which aimed to stabilize housing markets across US cities. These guidelines were presented as redlining maps which classified city districts into categories based on their proximity to industrial areas, housing conditions, average income, and racial demographics. The outcome of redlining has been targeted disinvestment in communities of color. Areas of SLC with a higher proportion of residents of color and pollution densities were classified as 'Hazardous' or 'Definitely Declining', while white neighborhoods with less pollution were classified as 'Still Desirable' or 'Best' (*Mapping Inequality*). The planning practice of redlining impacted where Black and Latinx residents could buy property in SLC. Latinx residents were pushed into the neighborhoods around Pioneer Park on the west side of SLC from the 1880-1920s due to its proximity to railroads and more affordable housing, and redlining in the 1930s and 40s further solidified racial neighborhood divides. To this day, Latinx communities in SLC are predominantly found on the west side of town, with I-15 dividing Latinx neighborhoods from white neighborhoods (Figure 1).

Religious affiliation also impacts SLC resident's pollution exposure. A 2018 study by Collins and Grineski found that whiteness and the LDS affiliation of a community were the strongest predictors of reduced exposure to air pollution, and that Mormon residents' 'collective power serves to protect them from air pollution' (Collins & Grineski, 2019). In contrast, SLC's Latinx and Black communities were at greater risk of air pollution exposure, and often are not LDS. These findings are concerning and may worsen as SLC becomes more racially diverse.

Investigating how Latinx communities are continuing to evolve in SLC is a critical step in ensuring that Latinx residents continue to have vibrant, established communities in Utah. By looking at SLC's history we can see how the legacy of redlining and religious affiliation impact Latinx neighborhoods today and into the future.

Data and Methods

We analyze American Community Survey (ACS) 5 year estimates from 2010 and 2019 to determine whether census tracts with high densities of EPA environmental hazard sites have a growing, shrinking, or unchanging proportion of Latinx residents. Polluted sites include Hazardous Waste and Used oil facilities, solid waste facilities, superfund sites, brownfield sites, and remediation sites (UT AGRC). Polluted sites were combined into one, comprehensive pollution dataset, which was then used to conduct a hotspot analysis. The hotspot analysis was conducted in GeoDa (Anselin et al., 2006) on a ~0.5 mile² grid spanning the extent of Salt Lake County. The Getis-Ord G^{*}i statistic was used to identify spatial clusters of polluting industry hot and cold spots. This method produces measures and p-values that identify statistically significant spatial clusters of high (hot) and low (cold) values. In our analysis hot spots represent clusters of grid cells with significantly higher concentrations of polluting industry sites. Pollution hotspots and the location of Latinx communities were compared to the location of redlining districts from the 1930s to visually inspect spatial patterns of pollution, race, and redlining practices.

Conclusions

There is a clustered toxic site hotspot in downtown and west Salt Lake that follows the I-15 corridor from Murray to Temple Square. We see the most significant concentration of toxic sites in W Salt Lake in the Glendale Neighborhood. In 2010, census tracts with the most Latinx residents were predominantly located in west SLC and there is substantial visible overlap between the toxic site hotspot and census tracts containing the largest Latinx populations (Figure 3). These spatial patterns also conform to the redlined 'Hazardous' and Industrial areas of SLC (Figure 2). This suggests that early Latinx communities in Salt Lake were restricted to areas that were being developed for industry and likely had the highest pollution exposure. In 2019 we see a decrease in the % Latinx residents in downtown Salt Lake census tracts and census tracts further west seem to see an increase in % Latinx Residents (Figure 1). The census tracts where we seem to see a loss of Latinx residents appear to be those that have been targeted for downtown Tax Incremental Urban Redevelopment and Renewal Projects. Further research needs to be done on how the current targeting of these areas as Urban Renewal sites impacts SLC's Latinx residents and their pollution exposure.

Citations

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% Latinx People per Census Tract- Salt Lake County, UT

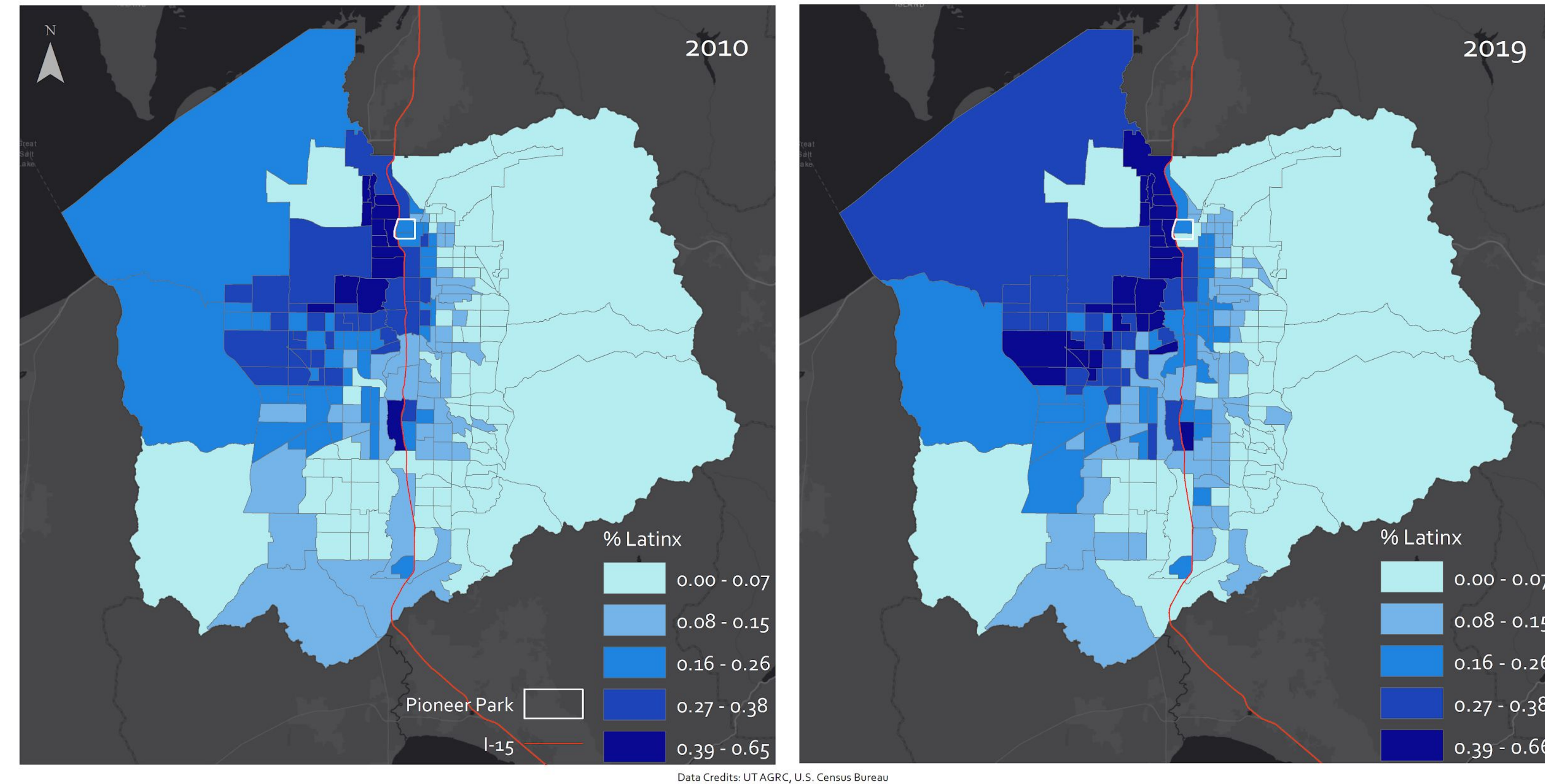


Figure 1: Proportion of Latinx People per Census Tract in Salt Lake County, UT. % Latinx per tract calculated by dividing the number of residents identifying as Hispanic or Latinx per tract by the tract's total population.

Redlined Districts in Salt Lake City: % Latinx in 2010 and 2019

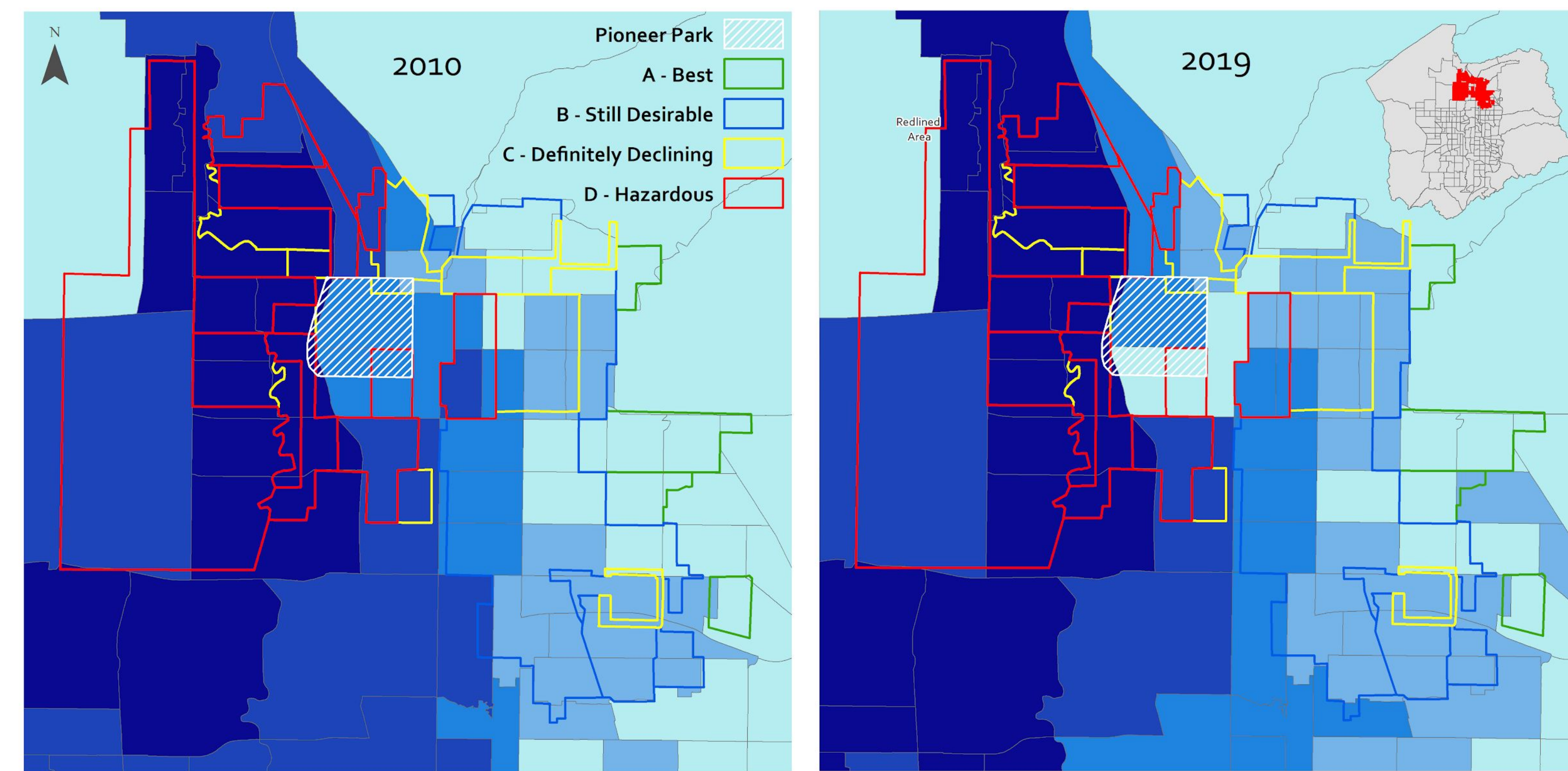


Figure 2: Redlined districts in SLC with % Latinx residents for 2010 and 2019.

Terrestrial Pollution Hotspots- Salt Lake City

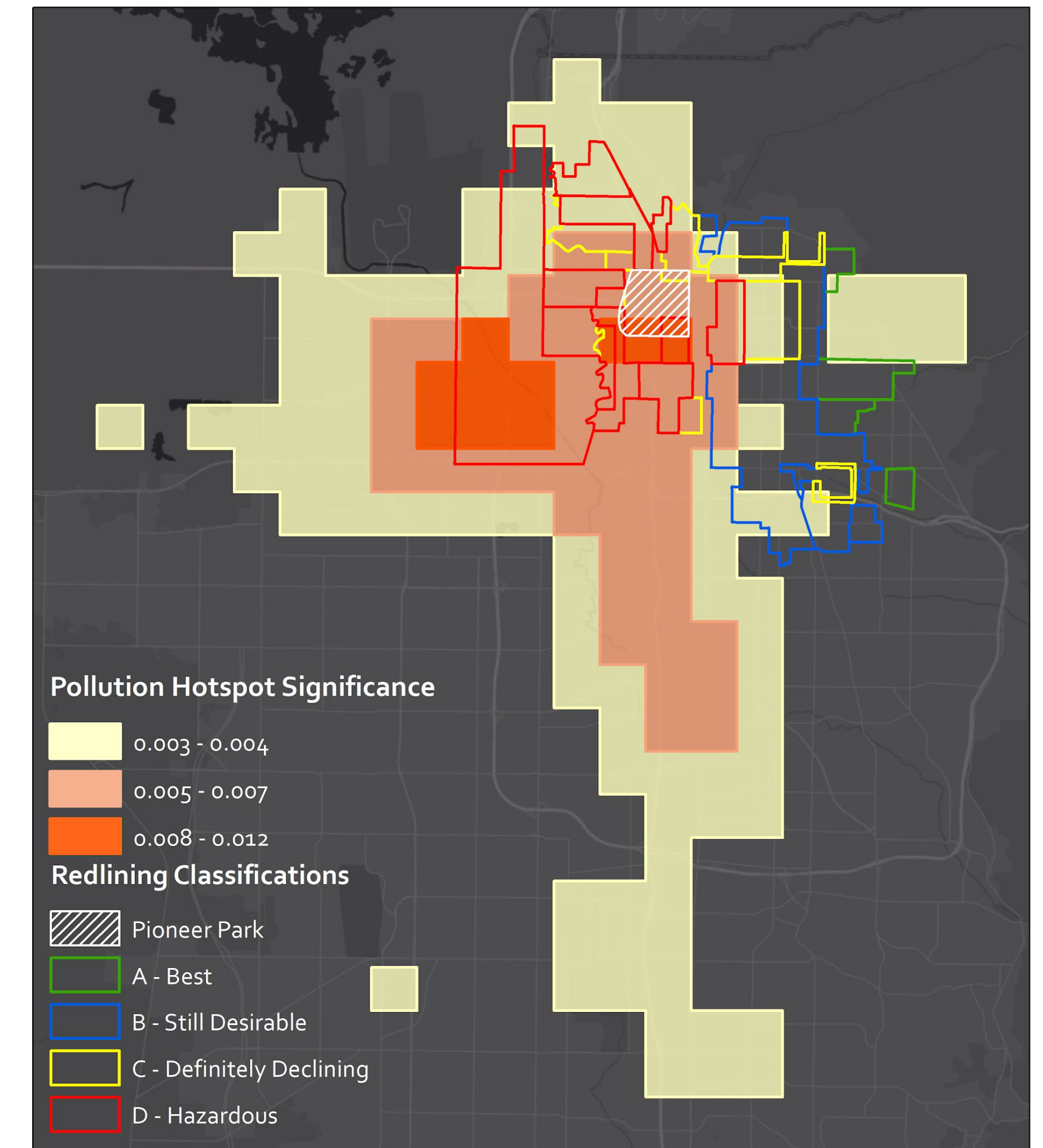


Figure 3: Terrestrial pollution hotspots in SLC in relation to redlined districts.

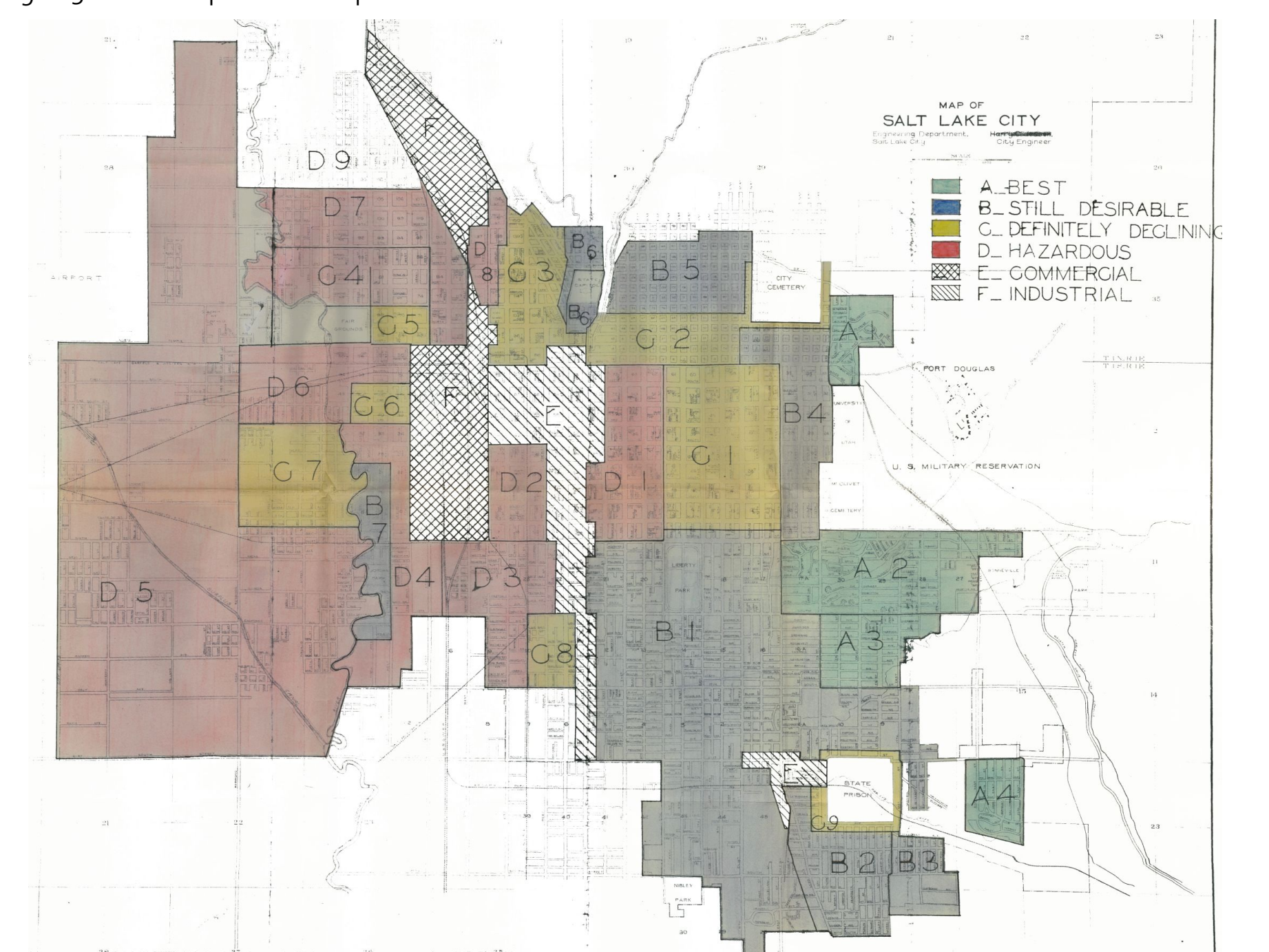


Figure 4: Original redlining map for SLC from the 1930s.