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The Urban Displacement Replication Project

A Modified Gentrification and Displacement Methodology for the Atlanta, Chicago, Denver, and Memphis SPARCC regions



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EXECUTIVE SUMMARY

The Urban Displacement Replication
Project

Building on its gentrification and displacement maps for the San Francisco Bay Area and Los Angeles County, in 2018, the UC Berkeley's Urban Displacement Project partnered with the [Strong, Prosperous, and Resilient Communities Challenge \(SPARCC\)](#) to assess local dynamics around gentrification, displacement, and exclusion in collaboration with local partners in Atlanta, Chicago, Denver, and Memphis. Through a series of conversations with local SPARCC partners across these regions, the Urban Displacement Project team gained invaluable insight into local dynamics around neighborhood change which directly informed the creation of a modified gentrification and displacement typology that formed the basis of interactive maps for the Atlanta, Chicago, Denver, and Memphis regions. This paper accompanies another working paper, "Building a National Narrative of Anti-Displacement Policies: Key Takeaways from the SPARCC Regions" to summarize the modified methodology, research limitations and future implications of this work.

This project provided an opportunity to refine our previous approach to incorporate new indicators and new data sources to capture a wider spectrum of neighborhood change dynamics at a fine-grained level. As such, the modified methodology included a new approach for defining tract-level income categorizations, integrated Zillow housing value and Census rental data to capture recent shifts in housing markets and accounted for proximity to tracts with increasing housing costs ("extra-local factors"). Finally, in order to contextualize the outputs of our maps, we added a number of overlays including displacement risk factors (i.e., anchor institutions, rail stations), public housing sites, neighborhood racial segregation, and redlining maps.

Overall findings across regions were as follows:

- » All four metropolitan regions are stratified by income and housing market types.
- » Less than ten percent of residents across regions lived in areas either at risk of or currently experiencing gentrification.
- » Gentrification that is occurring tends to be in central urban areas with high proportions of renters and people of color.
- » Over two-thirds of all tracts experiencing advanced stages of gentrification fall within historically redlined areas.
- » Two-thirds of tracts classified as currently at risk of or experiencing gentrification were within Qualified Opportunity Zones.

Findings specific to each region were as follows:

- » The Atlanta Beltline may have a gentrifying impact on proximate neighborhoods in the region potentially contributing to investment-driven displacement across the region.
- » There is growing exclusion north of Chicago's city center alongside continued systemic decline in areas such as the Southside.

- » Lower income areas in Denver tend to have more White residents compared to other SPARCC regions yet, areas at risk of or experiencing displacement are still largely communities of color.
- » Memphis is experiencing a different type of disinvestment-driven displacement compared to the other SPARCC regions, suggesting further refinement of our methodology and typology categories.

Overall, the modified gentrification and displacement methodology and associated maps for the Atlanta, Chicago, Denver, and Memphis regions revealed that the data and existing literature largely align with on-the-ground perceptions of neighborhood change. However, it is still difficult to fully capture the local dynamics of gentrification and displacement using a universalizing methodology. This is in part due to data limitations, complicated legacies of racial discrimination that are difficult to fully describe through data visualizations, and a narrow definition of gentrification that potentially caters to large and high cost metros. Thus, we see our maps as a continued work-in-progress that sheds light on new opportunities to improve community-engaged, data-driven research such that they are responsive and adaptive to ever-changing demographic and economic conditions.

Introduction

The Urban Displacement Project (UDP) is a research and action initiative of UC Berkeley’s Center for Community Innovation which aims to understand and describe the nature of gentrification and displacement, and also to generate knowledge on how policy interventions and investments can respond to support more equitable development. Ultimately, the goal of UDP is to produce rigorous research and create tools to empower advocates and policymakers, to reframe conversations, and to train and inspire the next generation of leaders in equitable development.

In 2015, researchers at UDP collaborated with the Metropolitan Transportation Commission/Association of Bay Area Governments to better understand and predict where gentrification and displacement was happening and would likely occur in the Bay Area through a community-engaged research process. This analysis was replicated for Los Angeles County in partnership with collaborators from UCLA as outlined in a research article, “Forewarned: The Use of Neighborhood Early Warning Systems for Gentrification and Displacement” (Chapple and Zuk 2016). These efforts culminated in the creation of interactive [gentrification and displacement typology maps](#) for the San Francisco Bay Area and Los Angeles regions which summarized housing market dynamics and displacement and gentrification risks at the census tract level. The goal of these maps was to help frame conversations around issues of gentrification, displacement, and exclusion and to inform strategies to mitigate the negative impacts of housing instability (See Appendix for the original typology).

Building upon our continued gentrification and displacement analysis for other regions both nationally and internationally, in 2018, UDP partnered with the [Strong, Prosperous, and Resilient Communities Challenge \(SPARCC\)](#) to assess local dynamics around gentrification, displacement, and exclusion in four of its six target regions, specifically Atlanta, Chicago, Denver, and Memphis.¹ Known as the UDP Replication Project, our goals were: 1) to draw upon local insights to inform a modified gentrification and displacement methodology that acknowledges local dynamics and incorporates updated and new data sources; 2) to use this modified methodology to develop gentrification and displacement maps for the four sites that can be used for local planning and anti-displacement policy advocacy efforts; and 3) to describe common neighborhood change dynamics across regions to build support for a national, action-oriented narrative around anti-displacement efforts.

The accompanying paper, “Building a National Narrative of Anti-Displacement Strategies” (Urban Displacement Project, forthcoming) summarizes themes from the UDP team’s engagement with SPARCC affiliates across the four regions as it relates to a national narrative around anti-displacement. This paper describes how we translated feedback from SPARCC affiliates into a modified gentrification and displacement methodology which would inform the basis of maps for Atlanta, Chicago, Denver, and Memphis. We also share key takeaways across and within regions and end with implications for future research and practice.

¹ The SPARCC initiative also included the San Francisco Bay Area and Los Angeles County regions, which were not part of this research specifically. That being said, our initial research and maps created for these regions helped inform our conversations with local SPARCC affiliates as summarized in our accompanying paper “Building a National Narrative of Anti-Displacement Strategies: Key Takeaways from SPARCC.”

Project Overview and Approach

Launched in 2018, the UDP Replication Project kicked off with a cross-site webinar with the SPARCC national team, local affiliates and other stakeholders followed by a series of regional engagements over the course of six months. In Fall 2018, we conducted four interactive workshops with SPARCC site leads and research partners in Atlanta, Chicago, Denver, and Memphis respectively. During these workshops, we shared our prior gentrification and displacement research as well as preliminary “strawman” maps to initiate discussions on how to approach a modified gentrification and displacement methodology and accompanying maps for Atlanta, Chicago, Denver, and Memphis.

We refined our methodology and maps through an iterative process throughout 2019 and early-mid 2020, engaging SPARCC research partners and site leads at key points to provide project updates, review methodological changes, and incorporate new feedback as it was received. As a result of this work, we updated the categories that comprised our gentrification and displacement maps as well as the specific language used to describe neighborhood conditions to better reflect the dynamics local partners identified on the ground. We also compiled a variety of publicly available data to incorporate into maps as overlays (See Appendix).

In addition to this feedback from SPARCC regions, our modified methodology acknowledges and responds to a number of existing gentrification mapping projects. For example, recent studies by [Governing Magazine](#), the [National Community Reinvestment Coalition](#) and [Enterprise Community Partners](#) analyze gentrification patterns across U.S. cities including the four SPARCC regions. Additionally, there is a growing body of research on gentrification and displacement patterns in Chicago and Denver.² All of these projects use different data sources, slightly different indicators, and an overall different approach to develop maps for mainly urban core areas of their study sites. While our modified methodology is not directly comparable given these notable differences, we attempted to understand the differences in our approach, while grounding our analysis in local conditions and incorporating feedback from local site partners.

Given regional push-and-pull factors that contribute to gentrification and displacement, our methodology and analysis considers both urban core and non-urban census tracts. Additionally, our methodology considers a broader spectrum of neighborhood change factors that might contribute to gentrification and displacement by identifying neighborhoods that are exclusive or becoming exclusive to low-income households. Finally, our methodology incorporates new data sources that capture unique circumstances in the housing and rental market.

² Relevant Chicago gentrification studies include but are not limited to [DePaul University’s Institute for Housing Studies](#) (also SPARCC research partner) and [Loyola University’s Center for Urban Research and Learning](#). Relevant Denver displacement studies include but are not limited to the City of Denver’s “Mitigating Involuntary Displacement” report (2016).

Modified Gentrification and Displacement Methodology for SPARCC Regions

As described in Table 1, key modifications to the typologies include: 1) the addition of new methodological categories capturing phenomenon like disinvestment-driven displacement; 2) the use of new mixed-income neighborhood types and a “market type” designation demonstrating each tract’s affordability to households of different income levels; and 3) the incorporation of “extra-local” factors that may contribute to an individual census tract’s vulnerability to displacement.

Table 1. Modifications to the UDP Gentrification Typology Methodology

ORIGINAL UDP TYPOLOGY	KEY CONSIDERATIONS IDENTIFIED BY SPARCC SITES	MODIFIED UDP TYPOLOGY/ CLASSIFICATION FOR SPARCC SITES
Stable Low-Income	SPARCC sites expressed concern about stigmatizing low-income neighborhoods, ensuring clarity that some people may experience displacement in predominantly “stable” low-income neighborhoods	Changed typology name to Low-Income/Susceptible to Displacement
Ongoing Displacement of Low-Income Households (New)	UDP’s typologies should consider disinvestment-driven displacement as well as investment-driven displacement	Added this as a new typology, which isolates tracts that are consistently low-income and experiencing a loss of low-income residents.
At Risk of Gentrification	Observation that proximity to exclusive or higher-cost neighborhoods can make neighborhoods more vulnerable to gentrification	Added extra-local factors, including nearby increases in rent between 2012-2017 and the presence of a rent gap in 2017

INCOME THRESHOLDS

We originally classified tracts based on median household income compared with regional area median income (AMI) as follows:

AMI (2017)	INCOME LEVEL
< 80%	Low
80-120%	Moderate
>120%	High

Based on these thresholds, we used gross rents and monthly owner costs to determine whether each tract was affordable to low, moderate, or high-income households in 2017. During the site engagement process, however, local SPARCC affiliates in Atlanta and Chicago noted that neighborhood income levels should not be defined solely based on median income, as this obscures the conditions of mixed-income neighborhoods. As a result, we revised our approach for assessing neighborhood income level in order to better reflect these mixed-income nuances. The final typologies classify tracts with 55% or more of the population belonging to a given income group as “predominantly” low, moderate, or high-income. Tracts without a predominant income group were classified as “mixed” and then identified as low, moderate, or high-income mixed tracts according to their median household income. Thus, “mixed low-income,” “mixed moderate-income,” and “mixed high-income” were added to the income classifications in the final typology methodology.

MARKET TYPE

Partners in Chicago and Memphis noted that our designation of tracts as “hot markets” based on changes in rent relative to the region may be misleading in lower-cost, cool market urban contexts. Specifically, there was concern that this designation could vary widely according to the year chosen as the starting point for assessing “hot market” activity and the geographies to which the “hot markets” would be compared. We responded to this feedback by incorporating a new “market type” designation into the typologies (see Appendix). The market type category enables the typologies to demonstrate housing affordability to low, moderate, or high-income households in conjunction with broader patterns of change in housing cost. We also updated the data used to describe housing market conditions by incorporating the latest American Community Survey (ACS) data from 2017, and by adding a flag for recent home value change to the market type category based on 2012-2017 Zillow data.

Modified Gentrification, Displacement, and Exclusion Typology

This section describes the typology (See Table 2) and overlays in further detail. These categories were refined through an iterative process. We received ongoing feedback on draft gentrification and displacement maps which informed the final categories presented here. These nine typologies define a general neighborhood change progression from the top to bottom of the table. For example, Ongoing Displacement of Low-Income Households may precede At Risk of Gentrification, which precedes Early Ongoing Gentrification, and so on and so forth. However, some neighborhoods may not change—they may stay Low-Income, Moderate/Mixed-Income, or Advanced Exclusive.

Table 2: Modified UDP Typology

MODIFIED TYPES	CRITERIA
LOW-INCOME/SUSCEPTIBLE TO DISPLACEMENT	<ul style="list-style-type: none"> Low or mixed low-income tract in 2017
ONGOING DISPLACEMENT OF LOW-INCOME HOUSEHOLDS	<ul style="list-style-type: none"> Low or mixed low-income tract in 2017 Absolute loss of low-income households 2000-2017
AT RISK OF GENTRIFICATION	<ul style="list-style-type: none"> Low income or mixed-low income tract in 2017 Housing affordable to low or mixed-low income households 2017 Didn't gentrify 1990-2000 OR 2000-2017 Marginal change in housing costs OR Zillow home or rental value increases in the 90th percentile between 2012-2017 Local and nearby increases in rent were greater than the regional median between 2012-2017 OR the 2017 rent gap is greater than the regional median rent gap
EARLY ONGOING GENTRIFICATION	<ul style="list-style-type: none"> Low income or mixed-low income tract in 2017 Housing affordable to moderate or mixed moderate-income households in 2017 Increase or rapid increase in housing costs OR above regional median change in Zillow home or rental values between 2012-2017 Gentrified in 1990-2000 or 2000-2017

ADVANCED GENTRIFICATION	<ul style="list-style-type: none"> • Moderate, mixed moderate, mixed high, high income tract in 2017 • Housing affordable to middle, high, mixed moderate, and mixed high-income households in 2017 • Marginal change or increase in housing costs • Gentrified in 1990-2000 or 2000-2017
STABLE MODERATE/MIXED INCOME	<ul style="list-style-type: none"> • Moderate, mixed-moderate, mixed-high, high income tract 2017
AT RISK OF BECOMING EXCLUSIVE	<ul style="list-style-type: none"> • Moderate, mixed-moderate, mixed-high, high income tract in 2017 • Housing affordable to middle, high, mixed-moderate, and mixed-high income households in 2017 • Marginal change or increase in housing costs
BECOMING EXCLUSIVE	<ul style="list-style-type: none"> • Moderate, mixed-moderate, mixed-high, high income tract in 2017 • Housing affordable to middle, high, mixed-moderate, and mixed-high income households in 2017 • Rapid increase in housing costs • Absolute loss of low-income households 2000-2017 • Declining low Income in-migration rate 2012-2017 • Median income higher in 2017 than in 2000
STABLE/ADVANCED EXCLUSIVE	<ul style="list-style-type: none"> • High-income tract in 2000 and 2017 • Affordable to high income households in 2017 • Marginal change, increase, or rapid increase in housing costs

LOW-INCOME/SUSCEPTIBLE TO DISPLACEMENT TYPE

The Low-Income/Susceptible to Displacement type aims to identify predominantly low-income or mixed low-income neighborhoods that exhibit characteristics of neighborhood stability and affordability to low-income households but could develop a risk of gentrification and displacement pressures in the future. During our engagement with the SPARCC sites, there was concern that labeling a low-income neighborhood as “stable low-income” or implying that it is “not losing low-income households” might be stigmatizing and misleading. As such, we heard that this typology’s framing should not discount the experiences of residents who have endured gentrification and displacement pressures despite this not being the tract’s predominant narrative. In response, we adjusted this typology’s name to “Low-Income/Susceptible to Displacement” to indicate the potential for change over time and to eliminate any implication that no displacement occurs in these tracts.

This type includes only one criterion; the tract had to be low-income or mixed low-income in both 2000 and 2017. This is due to the presence of additional criteria in other tracts and the structure of UDP’s classification process. For example, including criteria in this type for housing prices affordable to low-income households would be redundant, considering that other types account for housing affordable to all other income categories.

ONGOING DISPLACEMENT OF LOW-INCOME HOUSEHOLDS TYPE

Local partners in Chicago, Memphis, and Denver each emphasized that UDP’s typology should consider disinvestment-driven displacement as well as investment-driven displacement. To better incorporate trajectories of cooler-market neighborhoods and regions that experience disinvestment-driven displacement, we added an “Ongoing Displacement of Low-Income Households” category to the final typology.

Tracts were marked as experiencing “Ongoing Displacement of Low-Income Households” if they qualified as low-income or mixed low-income in 2017 and experienced an absolute loss of low-income households between 2000–2017. Again, we accounted for limited criteria in this type by including extensive criteria in other types. While tracts that were experiencing ongoing displacement of low-income households saw a loss in low-income populations between 2000 and 2017, these areas did not see substantial changes in their housing markets. Instead, low-income areas experiencing such shifts are accounted for in the following categories.

AT RISK OF GENTRIFICATION TYPE

The At Risk of Gentrification type identifies tracts that are not currently gentrifying but demonstrate characteristics of recent housing market change, housing stock, and proximity to areas that indicate risk of gentrification in the future. This type includes tracts that qualified as low-income or mixed low-income in 2017. These tracts also included primarily low-income households and affordable housing in 2017 but are experiencing marginal change in their housing markets.³ We identified tracts within this type as having *not* gentrified between 1990 and 2000, nor between 2000 and 2017. However, they must meet two of the following “risk factors” for gentrification: 1) experienced a marginal increase in housing costs (includes rents and mortgage costs) and the tract falls within the 90th percentile of recent increase in housing cost and 2) located in proximity to neighborhoods with increasing rents or neighborhoods with higher rents. We describe these criteria in further detail below:

1. *Experienced a marginal increase in housing costs (includes rents and mortgage costs) and the tract falls within the 90th percentile of recent increase in housing cost.* Local SPARCC affiliates in Atlanta and

³ See Appendix for housing market and gentrification definitions.

Memphis noted the lag in ACS data availability which, at the time of project execution, did not include data after 2017. We heard that this limited the ability to capture the most recent gentrification and displacement trends in neighborhoods. In response, we used ZIP code-level Zillow data to flag tracts located within a ZIP code at the 90th percentile of recent housing price increases from 2012-2017 and incorporated this into the gentrification risk factors.

2. *Located in proximity to neighborhoods with increasing rents or neighborhoods with higher rents.* We added this factor in response to observations from Chicago SPARCC affiliates who noted that proximity to high-cost and/or exclusive neighborhoods posed a risk of gentrification. Indeed, theorists like Neil Smith have pointed to the effect of “rent gaps,” or price differentials between urban areas, as one of the primary drivers of gentrification processes (Smith 1987).⁴ To account for this, we calculated a set of “extra-local” rent measures that compare nearby changes and gaps in rent prices specifically flagging areas where either: 1) surrounding tracts saw rent increases above the regional median between 2012-2017, or 2) the difference between tract rental prices and the prices of surrounding areas in 2017 was higher than the regional median difference in rental prices between tracts (rent gap).

STABLE MODERATE/MIXED INCOME TYPE

The Stable Moderate/Mixed Income type identifies moderate-to-high-income tracts that are not currently at risk of becoming exclusive neighborhoods. It includes tracts that qualified as moderate-income, mixed moderate-income, or mixed high-income in both 2000 and 2017. Tracts in this category were affordable to moderate-income, mixed moderate-income, and high-income households in 2017. All tracts that meet these qualifications and cannot be classified as At Risk of Becoming Exclusive, Becoming Exclusive, or Stable/Advanced Exclusive fall under the Stable Moderate/Mixed Income typology.

STABLE/ADVANCED EXCLUSIVE TYPE

The Stable/Advanced Exclusive category was added to the list in response to feedback from partners in Atlanta and Chicago, who noted that since some neighborhoods have exhibited characteristics of exclusion over long periods, losing low-income households within a recent timeframe should not be a prerequisite to designation as an exclusive tract. This new higher-income type highlights these neighborhoods that exhibit enduring patterns of exclusion beyond recent demographic change. Tracts designated as Stable/Advanced Exclusive have qualified as high-income or mixed high-income since 2000. They were affordable to high-income households in 2017 and are experiencing marginal change, increase, or rapid increase in their housing markets.

⁴ See Appendix for housing market and gentrification definitions.

Unchanged Gentrification, Displacement, and Exclusion Categories

The following section summarizes the typology categories that were consistent with the original UDP methodology (See Appendix) and did not require additional modification given the noted changes in the previous section.

EARLY/ONGOING GENTRIFICATION TYPE

The Early/Ongoing Gentrification category identifies tracts that are currently undergoing the process of gentrification. Tracts in this category qualified as low-income or mixed low-income in 2017. These tracts also included housing affordable to low-income, mixed low-income, moderate-income, and/or mixed moderate-income households in 2017. Additionally, we identified these tracts as having gentrified either between 1990 and 2000 or between 2000 and 2017 and are experiencing either an increase or rapid increase in their housing markets.

ADVANCED GENTRIFICATION TYPE

The Advanced Gentrification category captures gentrified neighborhoods that have turned over to predominantly higher-income residents. This type includes tracts that qualified as moderate-income, mixed moderate-income, high-income, and/or mixed high-income in 2017. These tracts also included housing affordable to moderate-income, mixed moderate-income, high-income, and/or mixed high-income households in 2017. Finally, these tracts experienced marginal change or increase in their housing markets and gentrified either between 1990 and 2000 or between 2000 and 2017.

AT RISK OF BECOMING EXCLUSIVE TYPE

Tracts in the At Risk of Becoming Exclusive category are moderate-to-high-income, but exhibit risk factors for future exclusion of lower-income households. These tracts qualified as moderate-income, mixed moderate-income, or mixed high-income in 2017. Additionally, these tracts included housing affordable to moderate-income, mixed moderate-income, and high-income households in 2017 and are experiencing marginal change or increase in their housing markets.⁵

BECOMING EXCLUSIVE TYPE

The Becoming Exclusive category captures neighborhoods that have begun the process of exclusion of lower-income households. Tracts in this category qualified as moderate-income, mixed moderate-income, or mixed high-income in 2017. These tracts included housing affordable to moderate-income, mixed moderate-income, high-

⁵ See Appendix for housing market definitions.

income, and mixed high-income households in 2017 and experienced a rapid increase in their housing markets. Additionally, these tracts experienced an absolute loss of low-income households between 2000 and 2017 and decreased in-migration rates among low-income households in 2017 compared to 2009. The median income of Becoming Exclusive tracts also increased between 2000 and 2017.

Map Overlays: Risk Factors and Contextual Markers

In response to our conversations with local SPARCC affiliates, we incorporated new data sources as interpretive map overlays in order to contextualize the map outputs. The map overlays created are as follows (additional details provided in the Appendix):

- » *Anchor Institutions:* Local SPARCC affiliates in Chicago and Memphis observed that such institutions, by providing job opportunities and access to certain services, may drive gentrification and displacement pressures. That being said, the connection between anchor institutions and the dynamics of displacement, gentrification, and exclusion is not empirically proven. And some would argue that these anchor institutions have also been part of efforts to mitigate displacement (Schildt and Rubin 2015). For this reason, we included anchor institutions as an overlay as an aid in interpreting the results of the maps.
- » *Opportunity Zones:* The Opportunity Zone program, passed as part of the Tax Cuts and Jobs Act of 2017, grants preferential tax benefits to investments made in Qualified Opportunity Zones (QOZs), or “economically distressed areas” designated by governors in each state. While the intent of the program is to spur economic development, there is concern among community developers and advocates that the program contains insufficient safeguards for tenants and businesses in low-income neighborhoods susceptible to investment-driven displacement. We included QOZs as an overlay on UDP maps to highlight this risk, particularly in low income areas currently at risk of or experiencing gentrification.
- » *Subsidized Housing:* Research suggests that residents are less frequently displaced from subsidized housing than from private market housing in gentrifying neighborhoods (Ellen, 2019). Likewise, Chicago SPARCC affiliates pointed to the demolition of subsidized housing as a driver of displacement. Thus, in response we included subsidized housing units as a map overlay, specifically public housing and project-based Section 8.
- » *Industrial Sites:* Industrial land can maintain disinvestment in a neighborhood, priming it either for gentrification pressures or disinvestment-induced displacement. Thus, we added an overlay of industrial land and toxic sites to demonstrate which neighborhoods face this proximity to a complex disamenity.
- » *Redlining:* Carried out during the New Deal Era and into the 1960s by the Homeowners Loan Corporation (HOLC), redlining is one form of disinvestment orchestrated by the federal government that denotes the literal

drawing of red lines around Black and immigrant neighborhoods on credit risk maps, discouraging banks from providing credit and other financial services. Digitized by the University of Richmond's [Mapping Inequality](#) project, we included redlining maps as an overlay in order to discern any overlaps among historically redlined areas and areas currently experiencing gentrification and displacement.

- » *Neighborhood Racial Typologies:* Racially segregated spaces are often sites of displacement, which dismantles cultural centers and exacerbates legacies of inequality through housing instability. The racial typology layer helps identify diverse and segregated spaces by highlighting which racial groups have a composition greater than a 10% in a neighborhood. This layer provides context for conversations on racial equity and its relationship to neighborhood change.
- » *Transit Stations:* Lack of access to transit in neighborhoods receiving displaced residents presents a serious issue, with vulnerable populations cut off from needed services and jobs in central areas. Transit data on this map show the locations of transit stops, including rail and bus, sourced from local data portals.
- » *Community Input:* Upon completing a second round of maps for SPARCC sites in the Spring of 2020, we engaged local SPARCC affiliates for additional feedback. Overall, local SPARCC affiliates' perceptions of gentrification, displacement, and exclusion mostly aligned with the modified typology with some exceptions for specific tracts across regions. In response, we adjusted criteria without too heavily altering the other updated categories. To account for cases where alterations could not be made without a major shift in approach, we included a Community Input Layer, which highlights tracts where local partners' perceptions differed from the map outputs. These differences are likely the result of data limitations.

Applying the Modified Methodology to Atlanta, Chicago, Denver, and Memphis

We applied the modified methodology to gentrification and displacement maps for Atlanta, Chicago, Denver, and Memphis (see Appendix) and further refined our maps iteratively with feedback from local SPARCC affiliates. Overall, the map outputs mostly aligned with local SPARCC affiliates' perspectives of dynamics on the ground as well as existing neighborhood change literature. There were notable misalignments, however, when it came to applying the methodology to cooler-market cities like Memphis. The following section outlines key takeaways from applying the modified methodology to SPARCC sites, along with findings specific to each city and region.

KEY TAKEAWAYS ACROSS ATLANTA, CHICAGO, DENVER, AND MEMPHIS

All four metropolitan regions are stratified by income and housing market types. As summarized in Table 3, exactly half of all tracts across the four sites fall either into the “low-income/susceptible to displacement” (21%) or “stable moderate/mixed-income” (29%) neighborhood type. Twenty-seven percent of all tracts were classified as mixed to moderate-income areas becoming exclusive to low-income households. This aligns with research that shows how income inequality is leading to fewer low-income housing opportunities in large metropolitan areas, as well as increasingly concentrated pockets of wealth, poverty, and opportunity (Chapple 2020; Harvard JCHS 2019; Cortright & Mahmoudi 2014; Institute of Metropolitan Opportunity 2019; Zuk et al. 2015).

The spatial distribution of the typology also follows a pattern typical in American cities; lower-income communities concentrated around urban cores, and exclusive, higher-income neighborhoods at the periphery. However, as mentioned in UDP's accompanying working paper for SPARCC, “Building a National Narrative of Anti-Displacement Policies” (Urban Displacement Project, forthcoming), this pattern has shifted in recent years with the growth of low-income and impoverished suburban communities (Kneebone, Nadeu, & Berube 2011; Mattiuzzi & Weir 2019). As common destinations for displaced residents of central cities, these areas typically lack strong access to employment opportunities, transit, and other critical services (ibid). SPARCC affiliates in Atlanta, Denver, and Memphis also pointed to the presence and growing challenges of these areas, a reality that the UDP maps and accompanying overlays help to illustrate (for maps, see Appendix).

SUMMARY: KEY TAKEAWAYS FROM ATLANTA, CHICAGO, DENVER, AND MEMPHIS

- » All four metropolitan regions are stratified by income and housing market types.
- » Less than ten percent of residents across regions lived in areas either at risk of or currently experiencing gentrification.
- » Gentrification that is occurring tends to be in central urban areas with high proportions of renters and people of color.
- » Over two-thirds of all tracts experiencing advanced stages of gentrification fall within historically redlined areas.
- » Two-thirds of tracts classified as currently at risk of or experiencing gentrification, were within Qualified Opportunity Zones.

Table 3. Distribution of Typologies, All Cities, 2017

	NUMBER OF TRACTS	% OF TOTAL	TOTAL POPULATION	% OF TOTAL
ALL	3577	100.0%	16,849,361	100.0%
LOW-INCOME/SUSCEPTIBLE TO DISPLACEMENT	756	21.0%	3,382,945	20.1%
ONGOING DISPLACEMENT OF LOW-INCOME HOUSEHOLDS	160	4.0%	417,877	2.5%
AT RISK OF GENTRIFICATION	257	7.0%	1,007,687	6.0%
EARLY ONGOING GENTRIFICATION	47	1.0%	140,259	0.8%
ADVANCED GENTRIFICATION	19	1.0%	73,353	0.4%
STABLE MODERATE/MIXED INCOME	1035	29.0%	5,243,713	31.1%
AT RISK OF BECOMING EXCLUSIVE	990	27.0%	5,214,154	30.9%
BECOMING EXCLUSIVE	121	3.0%	430,832	2.6%
STABLE/ADVANCED EXCLUSIVE	192	5.0%	938,541	5.6%

SOURCE: Numbers for Table 2 were aggregated using tracts from all SPARCC sites. Population statistics are sourced from the American Community Survey 2012-2017 5-Year Estimates. Margins of error were not included in these figures considering the population size of the aggregated tracts.

Less than ten percent of residents across all cities lived in areas either at risk of or currently experiencing gentrification. Very few neighborhoods were classified as “at risk of gentrification” (7%) and even fewer were in the early, ongoing, or advanced stages of the gentrification process (1.2%). These low counts reflect some existing literature on gentrification, which suggests gentrification is a relatively rare phenomenon, particularly when compared to neighborhoods experiencing urban poverty and continued disinvestment (Richardson et al. 2019; Cortright & Mahmoudi 2014; Institute of Metropolitan Opportunity 2019). Illustrative of this point is the fact that the population in low-income tracts that were not gentrifying was nearly three times that of tracts at risk of or experiencing gentrification as of 2017 (See Table 3).

Table 4. Key Demographic Characteristics by Typology, All Cities, 2017

	AVERAGE % PEOPLE OF COLOR	AVERAGE % RENTER-OCCUPIED UNITS	AVERAGE % COLLEGE EDUCATED
ALL	56.9%	47.4%	39.9%
LOW-INCOME/SUSCEPTIBLE TO DISPLACEMENT	75.0%	57.0%	23.0%
ONGOING DISPLACEMENT OF LOW-INCOME HOUSEHOLDS	86.0%	67.0%	21.0%
AT RISK OF GENTRIFICATION	89.0%	63.0%	13.0%
EARLY ONGOING GENTRIFICATION	73.0%	68.0%	34.0%
ADVANCED GENTRIFICATION	58.0%	55.0%	48.0%
STABLE MODERATE/MIXED INCOME	36.0%	29.0%	46.0%
AT RISK OF BECOMING EXCLUSIVE	40.0%	28.0%	41.0%
BECOMING EXCLUSIVE	36.0%	44.0%	61.0%
STABLE/ADVANCED EXCLUSIVE	19.0%	16.0%	72.0%

SOURCE: Numbers for Table 3 were aggregated using tracts from all SPARCC sites. Population statistics are sourced from the American Community Survey 2012-2017 5-Year Estimates. Margins of error were not included in these figures considering the population size of the aggregated tracts.

Gentrification that is occurring tends to be in central urban areas with high proportions of renters and people of color. Indeed, gentrification has not impacted all communities equally. The majority of neighborhoods experiencing some stage of the gentrification process were central and urban. As Table 4 demonstrates, gentrifying areas also have significantly higher percentages of renters and people of color. On the other hand, areas in later stages of gentrification that also include predominantly moderate-to-high income populations tout significantly higher percentages of white residents and homeowners. This is consistent with feedback from local SPARCC affiliates and existing research as noted in our accompanying paper; communities of color are frequently arenas for gentrification due to systemic racism, inequality, and discrimination, both in the present day and historically.

Over two-thirds of all tracts experiencing advanced stages of gentrification fall within a historically redlined area. The legacy of redlining in currently gentrifying areas is well illustrated when UDP maps are overlaid with HOLC redlining maps. Over half of all tracts classified as experiencing ongoing disinvestment-driven displacement fall within previously redlined areas. This is consistent with the literature that shows how redlining has contributed to significant gaps in both wealth and homeownership establishing the conditions necessary for recent gentrification

(Desmond & Shollenberger 2015; San Mateo County Eviction Report 2016; Rothstein 2017; Hwang, Hankinson, & Brown 2014).

Two-thirds of tracts classified as currently at risk of or experiencing gentrification, were within Qualified Opportunity Zones. These tracts also have significantly higher average percentages of non-white residents when compared to other tracts in the same typologies. Considering the data used to classify tracts is from the 2013-2017 ACS and Opportunity Zones came into effect in 2017, it is unlikely that Opportunity Zones factor into observed pressures. However, further analysis is warranted in following years to determine the connection between Opportunity Zones and any displacement that occurs (see Appendix for analysis).

REGION-SPECIFIC FINDINGS

Overall, the UDP Replication Project revealed that each SPARCC region grapples with unique circumstances driving displacement, gentrification, and exclusion. This section describes key takeaways related to the maps for Atlanta, Chicago, Denver, and Memphis respectively. See the Appendix for screenshots of the maps and tables detailing the typology in each region.

Atlanta. Among the greatest concerns of Atlanta SPARCC affiliates was the potential gentrifying impacts of the [Atlanta Beltline](#) rails-to-trails project, a major infrastructural project aiming to revitalize a now defunct rail corridor circumnavigating central Atlanta. While further research would be required in order to establish causation between the Beltline and gentrification, our maps help illustrate a potential spatial relationship between neighborhood change and the Beltline. As many as nine census tracts along the eastern position of the Beltline are classified as moderate- and mixed-income areas “becoming exclusive” to low-income households. In addition, lower-income, majority Black and Latinx areas in proximity to the trail along the Westside of Atlanta are showing signs of increasing housing costs and gentrification. This is consistent with feedback from Atlanta SPARCC affiliates and local communities, who have pointed to a decades-long history of disenfranchisement, displacement, and gentrification as a result of outside investment and megaproject construction in Westside areas, including the construction of interstates and the Mercedes Benz Stadium. This being said, our maps may have also underrepresented the extent of gentrification in some areas of the city, particularly areas like Vine City and English Avenue, both of which were cited by local SPARCC affiliates as sites of gentrification but are classified as “Low-Income/Susceptible to Displacement” on our maps. In fact, areas like Vine City saw an increase in low-income residents between 2000-2017. This suggests that our maps were in fact able to capture the nuances of gentrification, including the churn of specific racial or cultural groups within the low-income community as well as the commercial and institutional turnover that is characteristic of “cultural displacement” (Fullilove 2004; Hyra 2014).

Chicago. A key concern in Chicago was the uneven distribution of risks, resources, (dis)investment, and opportunity along racial lines in communities across the region. SPARCC affiliates pointed to Chicago’s predominantly black Southside neighborhoods, which have historically experienced systemic disinvestment and decline. School closures, gun violence, and investment-driven gentrification on the part of major institutions in these neighborhoods are contrasted with amenity-rich areas with predominantly White residents in the north part of the city. Our maps shed light on this pattern. Whereas many tracts south of the Loop are classified as low-income areas, in some cases experiencing displacement and/or displacement risk, many of the region’s most exclusive areas are concentrated on the northside of downtown. Chicago SPARCC affiliates noted, however, that in some cases the extent of displacement and gentrification risk in Chicago’s Southside may be overstated by our maps (see Research Limitations). In many cases areas tagged as at risk of gentrification were perceived by stakeholders as areas

SUMMARY: REGION-SPECIFIC FINDINGS

- » The Atlanta Beltline may have a gentrifying impact on proximate neighborhoods in the region potentially contributing to investment-driven displacement across the region.
- » There is growing exclusion north of Chicago’s city center alongside continued systemic decline in areas such as the Southside.
- » Lower income areas in Denver tend to have more White residents compared to other SPARCC regions yet, areas at risk of or experiencing displacement are still largely communities of color.
- » Memphis may be experiencing a different type of disinvestment-driven displacement compared to the other SPARCC regions, suggesting further refinement of our methodology and typology categories.

experiencing market stagnation or decline. This is especially true in the far southside close to the Indiana border and which the Community Input overlay helps illustrate.

Denver. In some ways, the distribution of Denver’s typology differs from other SPARCC sites. There are more lower income suburban areas, particularly to the city’s north, and higher income, exclusive tracts in the central city. Unlike other sites, lower income areas in Denver have more White residents compared to other SPARCC regions; yet, areas at risk of or experiencing displacement are still largely communities of color (see Appendix). A case in point noted by Denver SPARCC affiliates is Westwood, a predominantly Black neighborhood south of downtown. Despite attempts to capture more recent dynamics, however, Denver SPARCC affiliates observed that in some cases our maps underestimated the extent of displacement pressures in the region. This includes the Globeville/Elyria-Swansea neighborhoods, where the I-70 freeway improvements are igniting fears over displacement caused by real estate speculation and the city’s use of eminent domain to facilitate the freeway’s expansion (see Research Limitations).

Memphis. SPARCC affiliates in Memphis cited disinvestment and economic decline as major issues throughout the city, particularly in the Northside neighborhoods. Indeed, our maps reveal large swaths of low-income communities experiencing displacement of low-income households in northern areas of the city, as well as widespread geographies of low-income neighborhoods susceptible to displacement in northeastern suburbs. Despite indication from SPARCC affiliates that Memphis’ housing market and economic profile is cooler relative to other SPARCC sites, our methodology classifies around 10% of tracts as at risk of or experiencing gentrification (see Appendix). Memphis SPARCC affiliates did not agree with this categorization, however, saying that shifts in housing price in these areas may not signal the type of change typical to gentrification in large metros like Atlanta, Chicago, and Denver. Instead, they noted that persistent racial prejudice and economic decline serve as a sort of stopgap in the process. This points to the fact that, while we attempted to be responsive to local conditions, our methodology may still cater to cities with more dynamic housing markets and growing economies. In addition, our maps may be too agnostic to the effects of persistent racial bias on gentrification and displacement pressures and processes, specifically in southern cities where hyper-racialized geographies are rooted in legacies of Jim Crow segregation.

Overall, the UDP typologies paint a picture of neighborhood change across SPARCC sites that is fairly consistent with both existing literature and feedback from SPARCC research partners and site leads. The methodology is not perfect, however, and in some cases under or overestimates the extent of displacement, decline, gentrification and exclusion. These methodological limitations are detailed in the following section.

Research Limitations

During our research, we identified several key limitations that need to be addressed in future research. First, local groups that reviewed our estimates highlighted gentrification *underestimations* in areas near developing infrastructure or planned developments such as Atlanta’s Beltline, Chicago’s Logan Square, or Denver’s I-70 Freeway. Largely, pressures resulting from large infrastructure projects were not captured by the methodology because of temporal lags in the US American Community Survey data (ACS). The 5-year ACS provides a rolling estimate that is not the average for the middle year nor an accurate estimate for early or latter years within that time span. Therefore, several fine population details and shifts are unmeasurable between the available ACS and now. This reinforces the need to collaborate with local groups on gentrification projects to identify these holes and to be transparent about misalignments between local perceptions and public data—something we attempted to account for with the Community Suggestion Layer. One solution for future research would be to incorporate large-scale development data and commercial residential data that provides timelier household and built-environment information.

Second, local groups in Chicago and Memphis identified several *overestimations* of gentrification and gentrification risk, mostly within in Black and poor neighborhoods. While our models did identify gentrification characteristics in some of these neighborhoods—particularly ongoing displacement and at risk of gentrification—legacies of segregation, economic inequality, and divestment suppress neighborhood gentrification such that these areas may not change as quickly or as similarly to other low-income areas. Segregation research has argued for years that investors and White households are hesitant to move into Black and Brown neighborhoods without the promise of massive restructuring (Krysan and Crowder 2017). This points to an opportunity to refine our methodological approach to incorporate persistent racial segregation or bias in neighborhood change dynamics.

Lastly, our methodology does not account for cultural displacement or different types of turnover among low-income households. This is particularly true for the “Low-Income/Susceptible to Displacement” category which should be further refined in future research to include more diverse types of low-income turnover, or by accounting for the loss of particular racial and ethnic groups. The main takeaway from this is that gentrification research needs to incorporate a racial lens and modified risk models by taking into account legacies of inequality and finer details about low-income population turnover.

Conclusion

As summarized in this paper and our accompanying paper as part of the UDP Replication Project, there are notable cross-cutting neighborhood change patterns across regions with local nuances that are important to lift up to make the case for a national narrative around anti-displacement strategies. The modified gentrification and displacement methodology and associated maps for the Atlanta, Chicago, Denver, and Memphis regions revealed that the data and existing literature largely align with on-the-ground perceptions of neighborhood change. However, it is still difficult to fully capture the local dynamics of gentrification and displacement using a universalizing methodology. This is in part due to data limitations, complicated legacies of racial discrimination that are difficult to fully describe through data visualizations, and a narrow definition of gentrification that potentially caters to large and high cost metros.

Thus, we see our maps as a continued work-in-progress that sheds light on new opportunities to improve community-engaged, data-driven research such that they are responsive and adaptive to ever-changing demographic and economic conditions. As the COVID-19 global pandemic and impending economic downturn deepen pre-existing housing insecurity and economic inequality in the United States, it is more important than ever to improve the ways we define, measure, and track community vulnerability to better target resources for new solutions. Likewise, by drawing connections between gentrification and displacement and systemic racism, we hope research like the UDP Replication Project informs continued efforts and activism to undo white supremacy and anti-blackness in the United States generally, and in housing and neighborhood planning more specifically. Ultimately, the outputs of the UDP Replication Project intend to serve as an initial resource to help SPARCC regions and others to better advocate for needed resources and support, to shape anti-displacement policy and programs, and to steer public resources towards residents and organizations most in need.

Appendix

ORIGINAL UDP DISPLACEMENT TYPOLOGY, 2015

TYPOLOGY	CRITERIA
NOT LOSING LOW INCOME HOUSEHOLDS	<ul style="list-style-type: none"> Low income tract in 2015 Could be vulnerable to gentrification in 1990 and/or 2000, but did not experience demographic change
AT RISK OF GENTRIFICATION (LOW INCOME)	<ul style="list-style-type: none"> Low income tract 2015 Vulnerable to gentrification in 1990 and/or 2000 Contains risk factors*
ONGOING DISPLACEMENT OF LOW-INCOME HOUSEHOLDS	<ul style="list-style-type: none"> Low income tract 2015 Absolute loss of low-income Households from 2000-2015 Low income migration rate lower in 2015 than 2019
ONGOING GENTRIFICATION (LOW INCOME)	<ul style="list-style-type: none"> Low income tract in 2015 Vulnerable to gentrification in 1990 and experienced demographic change between 1990-2000 AND/OR Vulnerable to gentrification in 2000 and experienced demographic change between 2000-2015 Hot market (above regional median change in rent OR median home value)
ONGOING GENTRIFICATION (MODERATE TO HIGH INCOME INCOME)	<ul style="list-style-type: none"> Moderate to high income tract 2015 Vulnerable to gentrification in 1990 and experienced demographic change between 1990-2000 AND/OR Vulnerable to gentrification in 2000 and experienced demographic change between 2000-2015 Hot market
NOT LOSING LOW INCOME HOUSEHOLDS	<ul style="list-style-type: none"> Moderate to high income tract 2015 Could be vulnerable to gentrification in 1990 and/or 2000, but did not experience demographic change
AT RISK OF EXCLUSION	<ul style="list-style-type: none"> Moderate to high-income tract 2015 Contains risk factors Hot Market
ONGOING/ADVANCED EXCLUSION (MODERATE TO HIGH INCOME)	<ul style="list-style-type: none"> Moderate to high-income tract 2015 Population is stable or growing 2000-2015 Absolute Loss of low-income Households 2000-2015 Low income migration rate in 2015 lower than 2009

INCOME PROFILES

Income profiles were calculated using data from the US Census and American Community Survey (ACS). UDP employed data from the last three decennial Censuses (1990, 2000, and 2010) and ACS 5-Year estimates from 2008-2012 and 2013-2017.

Using an interpolation method, populations were divided by income category. Low-income individuals were categorized as individuals earning below 80% of the regional median income. Moderate-income persons were categorized as individuals earning between 80-120% of the regional median income. High-income individuals were categorized as individuals earning over 120% of the regional median.

Population proportions were then used to assign census tracts into six income categories: low income, high income, moderate income, mixed-low income, mixed-moderate income, and mixed-high income. UDP defined low, high, and moderate-income tracts as places where persons of the corresponding income category account for or exceed 55% of the total population. Mixed income tracts were defined as places with no majority income group, but where the median income of the tract falls below 80% of the regional median (mixed low income), between 80-120% (mixed-moderate income), or above 120% (mixed-high income).

MARKET TYPE

Rent and home value data come from the US Decennial Census (1990, 2000, and 2010) and American Community Survey (ACS 5-year estimates from 2008-2012 and 2013-2017), as well as from Zillow Home Value and Rent Indices for 2000, 2012, and 2017.

Census variables were used to determine the market characteristics of a tract, both in rental and housing markets (classified in our typology as “housing costs”). Tracts were flagged based off whether rents OR home values 1) decreased (saw a decline in prices less than -5%), 2) marginally changed (saw between a -5% or 5% change in price), 3) increased (saw over a 5% increase in prices, but increases were less than the regional median) and 4) rapidly increased (saw prices increase over the regional median). For home values, these changes were measured between 2000-2017. For rental values, changes were measured between 2012-2017.

Zillow data were used to account for more recent shifts in the housing market not otherwise captured by Census data. Specifically, values from the 2000, 2012, and 2017 Zillow Home Value Indices were used in the “At Risk of Gentrification”, “Early/Ongoing Gentrification”, and “Advanced Gentrification” categories.

DEFINITION OF GENTRIFICATION

A tract gentrified from 1990-2000 or 2000-2017 if the following criteria were met:

1. The tract was vulnerable to gentrification in the base year (1990 for gentrification between 1990 and 2000, or 2000 for gentrification between 2000 and 2017). Vulnerability is defined as tracts with:
2. Below regional median housing values or rents
3. Two or more of the following criteria is met:
 - a. Above regional median percent of population that is low income
 - b. Above regional median percent of population that is non-white
 - c. Above regional median percent of population that rents
 - d. Below regional median percent of the population that is college educated
4. The tract experienced an above regional median change in percent college educated population
5. The tract experienced an above regional median percent change in median income
6. The tract experienced above regional median percent change in housing values or rents (otherwise known as a “hot market”)⁶
7. For non-urban tracts⁷: tract experienced an above regional median loss in low income households (absolute loss)⁸

OVERLAYS

1. **Anchor Institutions data** were collected from the open data portals of study cities/counties.
2. **Industrial sites data** originated from TOXMAP; a geographic information system produced by the United States Library of Medicine until its deprecation in 2019. TOXMAP data came originally from the Environmental Protection Agency and includes Toxic Release Inventory (TRI) and Superfund sites. For the purposes of interpretation, these sites are recoded as “industrial sites.”
3. **Homeowners Loan Corporation (HOLC) redlining maps** used for the purposes of this project came from the [Mapping Inequality](#) project at the University of Richmond.
4. **Public housing data** come from the Department of Housing and Urban Development’s [Picture of Subsidized Households](#) database and include subsidized housing projects receiving funding from the following programs: 1) Public Housing, 2) Project Based Section 8, 3) Section 5236/BMIR, 4) Section 202/PRAC, 5) Section 811/PRAC, 6) Rent Supplement or RAP.
5. **Atlanta Beltline:** The Beltline layer for the Atlanta map was sourced from the Atlanta Beltline project site.

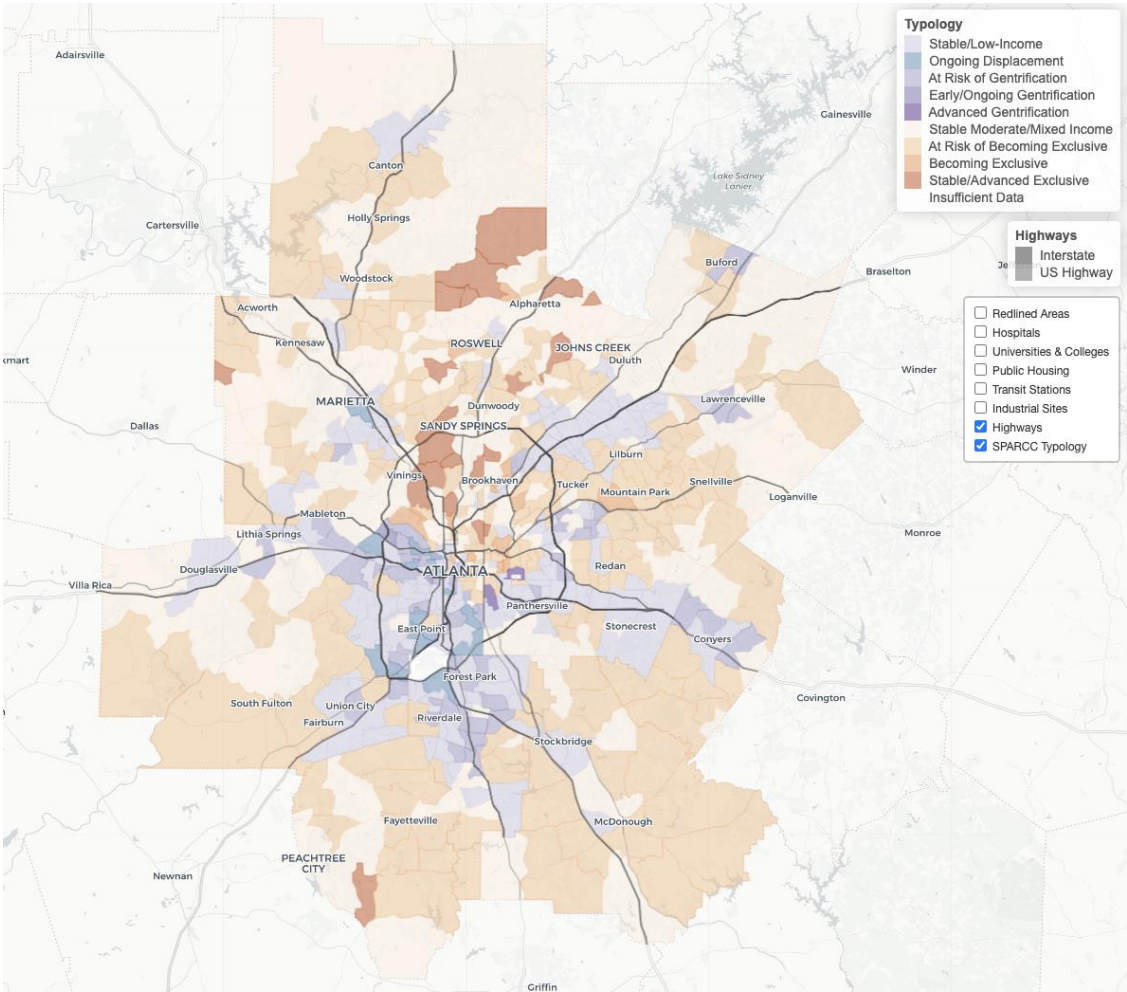
⁶ For 1990-2000 gentrification, both rental and home values changes are measured between 1990 and 2000. For 2000-2017 gentrification, home value changes are measured between 2000-2017, whereas rents are measured between 2012-2017.

⁷Non-urban tracts fall within a Public Use Microdata Area (PUMA), a Census defined geography, with a population density less than 3,000 people per sq. mile.

⁸ Note that a loss of low income households only factors into UDP’s definition of gentrification in non-urban areas. Studies have shown that losses of low income residents do not often accompany gentrification in urban areas, but rather happen before gentrification begins because of speculation and related pressures (Chapple & Loukaitou-Sideris, 2019; Dragan, Ellen & Glied, 2019). In non-urban and low-density rural areas, however, disinvestment/speculation dynamics differ and thus a concurrent loss of low income households is more likely to occur.

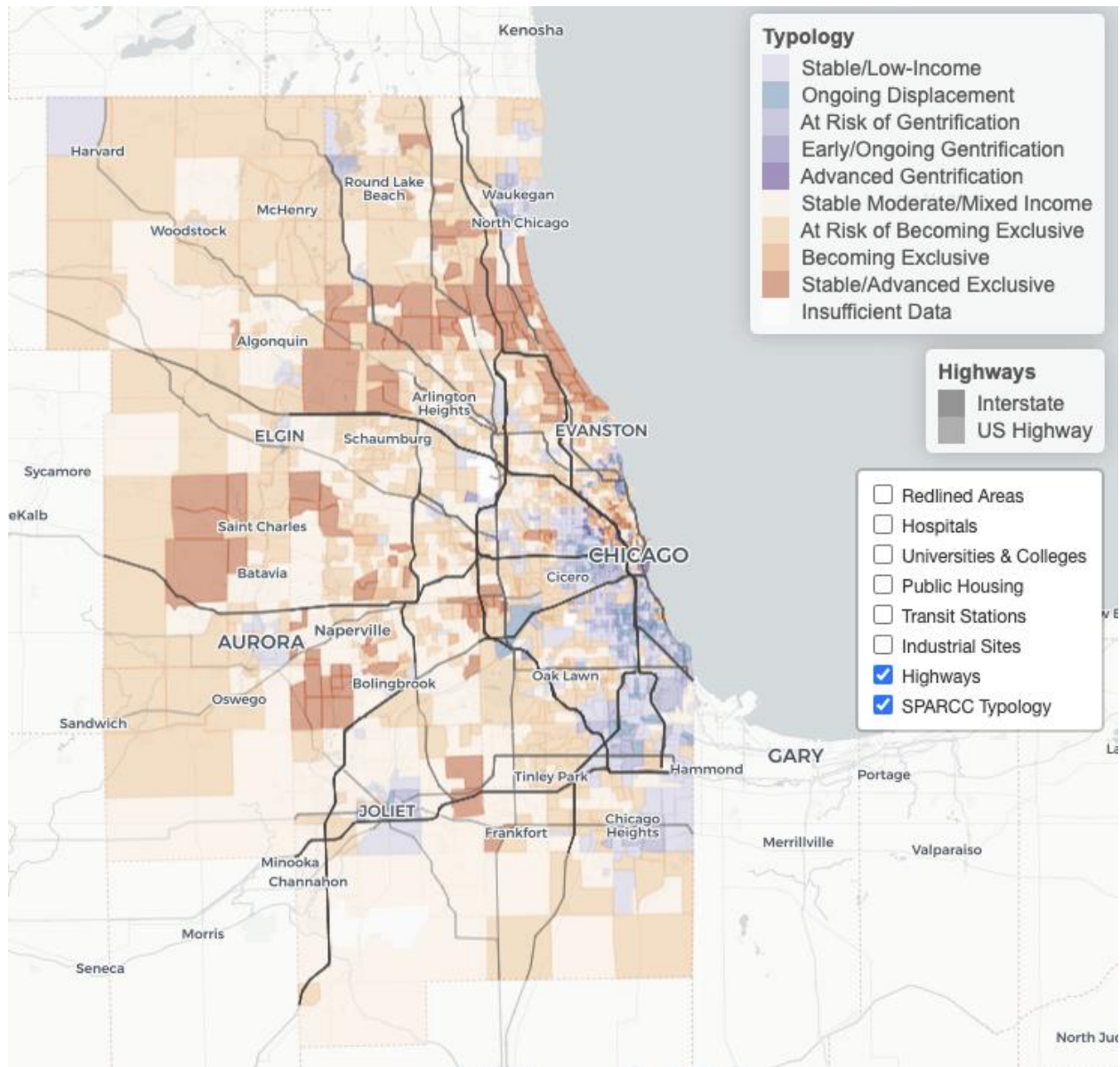
6. **Community Input Layer:** Data for this overlay is based on feedback provided by site research partners in the Spring of 2020. Partners who reviewed include Atlanta Regional Commission, DePaul Institute for Housing Studies, Neighborhood Preservation, Inc, Colorado Futures Center (in 2020), and Shift Research Labs (in 2018-2019).

ATLANTA GENTRIFICATION AND DISPLACEMENT MAP
[screenshot of interactive map website]

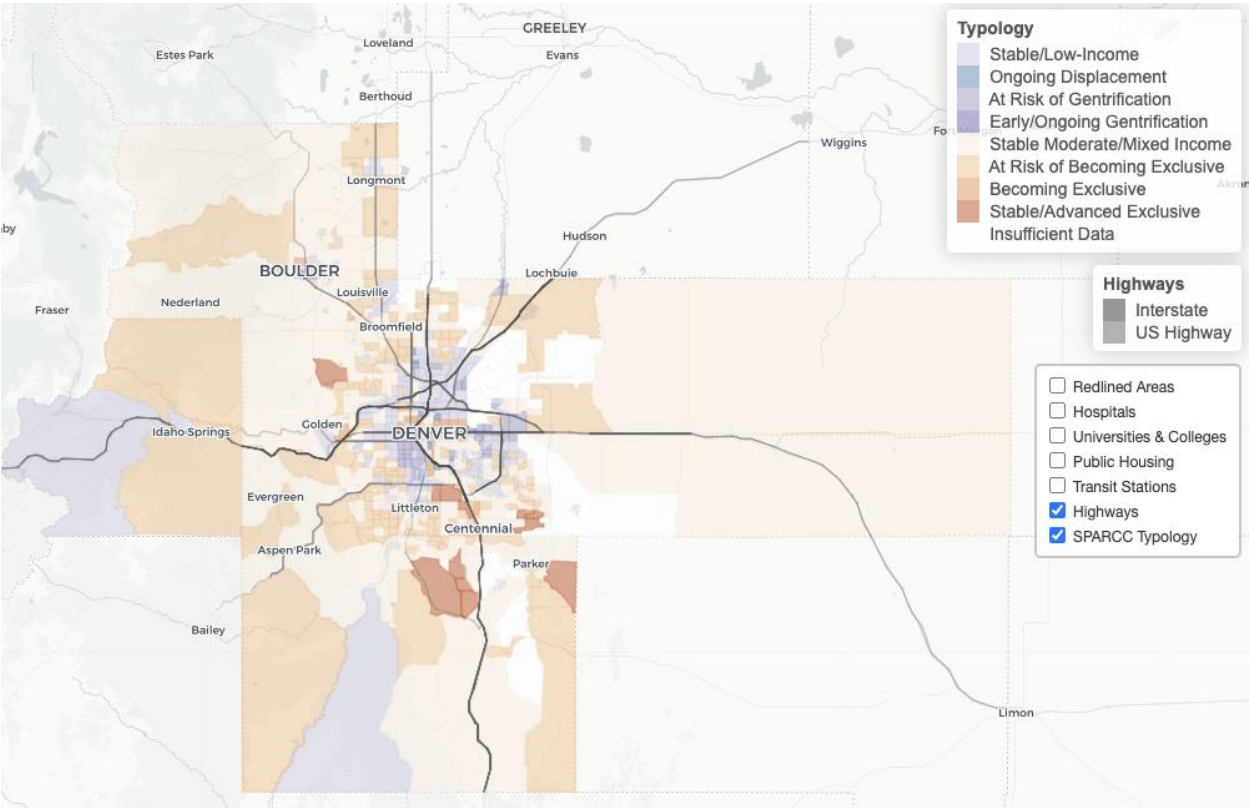


CHICAGO GENTRIFICATION AND DISPLACEMENT MAP

[screenshot of interactive map website]

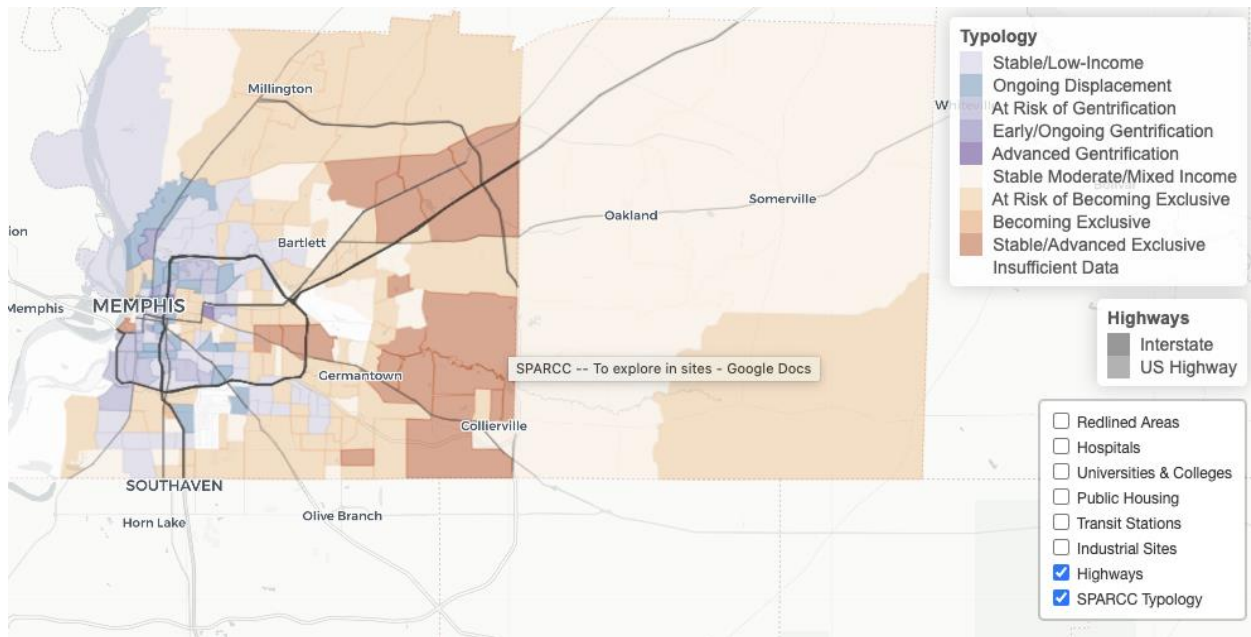


DENVER GENTRIFICATION AND DISPLACEMENT MAP
[screenshot of interactive map website]



MEMPHIS GENTRIFICATION AND DISPLACEMENT MAP

[screenshot of interactive map website]



ADDITIONAL ANALYSIS ACROSS SITES

TPOLOGY CHARACTERISTICS

The tables on the following pages provide descriptive statistics for all SPARCC sites. Data for this analysis is drawn from the American Community Survey, 5-Year Estimates, 2017.

Numbers/Categories were calculated using data from the 2008-2012 and 2012-2017 ACS, as well as data from the 1990, 2000, and 2010 decennial Censuses and 2019 property value data from Zillow.

ATLANTA DESCRIPTIVE STATISTICS, 2017

	Total Tract Count	Total Population	Mean % POC	Mean % Renter	Mean % College Educated	Median Income	Median Rent	Median Home Value
ALL	738	4,442,004	60%	41%	37%	\$62,222	\$1,119	\$171,950
LOW- INCOME/SUSCEPTIBLE TO DISPLACEMENT	174 (24%)	963,040	83%	62%	25%	\$40,716	\$977	\$127,197
ONGOING DISPLACEMENT OF LOW-INCOME HOUSEHOLDS	18 (2%)	50,856	87%	64%	19%	\$31,248	\$891	\$92,839
AT RISK OF GENTRIFICATION	54 (7%)	275,691	88%	69%	17%	\$31,032	\$806	\$94,080
EARLY ONGOING GENTRIFICATION	3 (<1%)	4,633	90%	78%	27%	\$36,815	\$986	\$175,400
ADVANCED GENTRIFICATION	2 (<1%)	8,791	67%	35%	44%	\$63,120	\$884	\$243,100
STABLE MODERATE/MIXED INCOME	239 (32%)	1,575,897	47%	32%	49%	\$76,602	\$1,366	\$257,495
AT RISK OF BECOMING EXCLUSIVE	206 (28%)	1,383,896	52%	29%	44%	\$70,396	\$1,203	\$227,732
BECOMING EXCLUSIVE	16 (2%)	57,684	35%	35%	65%	\$94,059	\$1,401	\$337,575
STABLE/ADVANCED EXCLUSIVE	21 (3%)	116,750	18%	13%	77%	\$160,625	\$2,036	\$639,214

CHICAGO DESCRIPTIVE STATISTICS, 2017

	Total Tract Count	Total Population	Mean % POC	Mean % Renter	Mean % College Educated	Median Income	Median Rent	Median Home Value
ALL	1,982	8,522,948	52%	39%	36%	\$63,938	\$1,071	\$217,350
LOW- INCOME/SUSCEPTIBLE TO DISPLACEMENT	375 (19%)	1,517,968	79%	53%	19%	\$41,515	\$955	\$161,588
ONGOING DISPLACEMENT OF LOW-INCOME HOUSEHOLDS	109 (5%)	272,212	85%	68%	21%	\$30,836	\$911	\$163,860
AT RISK OF GENTRIFICATION	148 (7%)	508,985	89%	63%	13%	\$31,429	\$770	\$132,082
EARLY ONGOING GENTRIFICATION	40 (2%)	126,070	67%	68%	36%	\$40,620	\$1,018	\$219,815
ADVANCED GENTRIFICATION	15 (1%)	59,650	51%	58%	50%	\$68,250	\$1,141	\$334,993
STABLE MODERATE/MIXED INCOME	516 (26%)	2,384,704	36%	27%	42%	\$79,750	\$1,346	\$273,213
AT RISK OF BECOMING EXCLUSIVE	554 (28%)	2,751,315	38%	28%	40%	\$73,413	\$1,201	\$260,761
BECOMING EXCLUSIVE	81 (4%)	277,483	37%	48%	60%	\$80,433	\$1,351	\$357,284
STABLE/ADVANCED EXCLUSIVE	139 (7%)	624,086	20%	17%	74%	\$142,813	\$1,894	\$573,287

DENVER DESCRIPTIVE STATISTICS, 2017

	Total Tract Count	Total Population	Mean % POC	Mean % Renter	Mean % College Educated	Median Income	Median Rent	Median Home Value
ALL	675	3,074,013	32%	35%	44%	\$72,667	\$1,308	\$311,800
LOW- INCOME/SUSCEPTIBLE TO DISPLACEMENT	157 (23%)	683,694	48%	57%	32%	\$48,659	\$1,074	\$253,787
ONGOING DISPLACEMENT OF LOW-INCOME HOUSEHOLDS	13 (2%)	49,492	51%	65%	35%	\$43,750	\$942	\$241,070
AT RISK OF GENTRIFICATION	36 (5%)	183,336	77%	57%	13%	\$41,650	\$962	\$171,246
EARLY ONGOING GENTRIFICATION	1 (<1%)	4,533	56%	55%	36%	\$52,963	\$1,251	\$203,700
ADVANCED GENTRIFICATION	0	-	-	-	-	-	-	-
STABLE MODERATE/MIXED INCOME	239 (35%)	1,117,719	26%	29%	51%	\$85,156	\$1,515	\$400,653
AT RISK OF BECOMING EXCLUSIVE	159 (24%)	726,694	26%	21%	46%	\$83,893	\$1,496	\$346,895
BECOMING EXCLUSIVE	23 (3%)	93,903	25%	40%	66%	\$82,959	\$1,333	\$443,096
STABLE/ADVANCED EXCLUSIVE	12 (2%)	57,565	17%	6%	71%	\$158,673	\$2,215	\$755,192

MEMPHIS DESCRIPTIVE STATISTICS, 2017

	Total Tract Count	Total Population	Mean % POC	Mean % Renter	Mean % College Educated	Median Income	Median Rent	Median Home Value
ALL	232	977,183	65%	46%	25%	\$41,228	\$873	\$93,550
LOW- INCOME/SUSCEPTIBLE TO DISPLACEMENT	50 (22%)	218,243	89%	62%	14%	\$26,638	\$799	\$75,440
ONGOING DISPLACEMENT OF LOW-INCOME HOUSEHOLDS	20 (9%)	45,317	91%	63%	11%	\$24,287	\$754	\$62,411
AT RISK OF GENTRIFICATION	19 (8%)	39,675	95%	62%	9%	\$18,056	\$638	\$49,025
EARLY ONGOING GENTRIFICATION	3 (1%)	5,023	89%	63%	12%	\$22,442	\$705	\$57,800
ADVANCED GENTRIFICATION	2 (1%)	4,912	60%	57%	32%	\$37,957	\$771	\$127,100
STABLE MODERATE/MIXED INCOME	41 (18%)	165,393	47%	33%	32%	\$63,125	\$1,010	\$173,605
AT RISK OF BECOMING EXCLUSIVE	71 (31%)	352,249	58%	40%	33%	\$51,445	\$1,007	\$138,337
BECOMING EXCLUSIVE	1 (<0%)	1,762	96%	51%	18%	\$42,188	\$818	\$99,400
STABLE/ADVANCED EXCLUSIVE	20 (9%)	140,140	30%	16%	57%	\$108,479	\$1,496	\$301,895

TYPOLOGIES AND REDLINING ANALYSIS

Figures in the following table are based off of the intersection of UDP typologies and HOLC maps downloaded from the [Mapping Inequality](#) project at the University of Richmond. Percentages are based on the number of tracts intersecting a HOLC designated area out of the total number of tracts in the typology. Percentages do not add up to 100%. HOLC maps often do not cover entire regions or cities, which have expanded significantly in the 80 years since maps were made.

Table 4. Percent Tracts Intersecting HOLC Map Neighborhood Grade Categories, by UDP Typology Categories

	A Grade ("Best")	B Grade ("Still Desirable")	C Grade ("Definitely Declining")	D Grade (Hazardous/ Redlined)
Low-Income/Susceptible to Displacement	0.79%	9.7%	33.20%	27.0%
Ongoing Displacement of Low-Income Households	1.88%	12.5%	56.88%	55.6%
At Risk of Gentrification	0.78%	7.8%	36.58%	44.7%
Early Ongoing Gentrification	0.00%	23.4%	65.96%	36.2%
Advanced Gentrification	5.26%	10.5%	57.89%	68.4%
Stable Moderate/Mixed Income	2.13%	6.3%	11.88%	8.0%
At Risk of Becoming Exclusive	2.22%	8.9%	17.98%	8.4%
Becoming Exclusive	4.13%	24.0%	55.37%	33.9%
Stable/Advanced Exclusive	10.42%	15.6%	18.75%	11.5%

SOURCE: Numbers for Table 4 were aggregated using the UDP typology from all SPARCC sites and Homeowners Loan Corporation maps provided by the Mapping Inequality project at the University of Richmond.

TYPOLOGY AND OPPORTUNITY ZONE ANALYSIS

Table 5. Percent of Opportunity Zone Tracts, By Neighborhood Category, 2017

	Total Tract Counts	Opportunity Zone Tract Counts	Percent of Opportunity Zone Tracts in Typology
ALL	3576	325	9.0%
Low-Income/Susceptible to Displacement	756	140	18.5%
Ongoing Displacement Of Low-Income Households	160	62	38.8%
At Risk of Gentrification	257	89	34.6%
Early Ongoing Gentrification	47	10	21.3%
Advanced Gentrification	19	2	10.5%
Stable Moderate/Mixed Income	1035	7	0.7%
At Risk of Becoming Exclusive	990	14	1.4%
Becoming Exclusive	121	1	0.8%
Stable/Advanced Exclusive	192	0	0.0%

SOURCE: Numbers for Table 5 were aggregated using the UDP typology from all SPARCC sites and Opportunity Zone designations provided by the Internal Revenue Service.

Table 6. Average % People Of Color, Opportunity Zone Tracts By Neighborhood Category, 2017

	Percent People of Color, All Tracts	Percent People of Color, Opportunity Zone Tracts	Difference
ALL	86.00%	44.0%	42.0%***
Low-Income/Susceptible to Displacement	83.0%	75.0%	8.0%***
Ongoing Displacement Of Low-Income Households	95.0%	86.0%	9.0%***
At Risk of Gentrification	92.0%	89.0%	3.0%***
Early Ongoing Gentrification	87.0%	73.0%	14.0%***
Advanced Gentrification	60.0%	58.0%	2.0%*
Stable Moderate/Mixed Income	51.0%	36.0%	15.0%**
At Risk of Becoming Exclusive	63.0%	40.0%	23.0%
Becoming Exclusive	15.0%	36.0%	-21.0%
Stable/Advanced Exclusive	0.0%	19.0%	-19.0%

Two Tailed T Test: *p < .10, **p < .05, ***p < .01

SOURCE: Numbers for Table 6 were aggregated using the UDP typology from all SPARCC sites and Opportunity Zone designations provided by the Internal Revenue Service. Population statistics are sourced from the American Community Survey 2012-2017 5-Year Estimates. Margins of error were not included in these figures considering the population size of the aggregated tracts.

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