

The Effect of Inclusionary Zoning on Racial Integration, Economic Integration, and Access
to Social Services: A Davis Case Study

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ALEXANDRA HOLMQVIST
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Approved:

Stephen Wheeler, Chair

Robert Wiener

Erin Hamilton

Committee in Charge

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ABSTRACT

The central premise of inclusionary zoning is that by requiring a certain percentage of units to be affordable in all new development, local governments can implement a policy that produces affordable units and improves the equitable distribution of social networks, social capital and social services. To analyze whether inclusionary zoning has resulted in increased racial and economic integration and facilitated access to social services, this paper examines Davis, California as a case study because it seems likely that the longstanding policy has influenced integration. The author uses the index of dissimilarity to compare tract-level Census data from 1980 through 2000 in order to analyze economic and racial integration in the decades before and after the policy was implemented. The author also mapped government records data using GIS in order to spatially represent the location of social services and affordable housing developments created by the inclusionary policy. Using these maps, the author compared trends in residential patterns of race, income, and social services through a tract level analysis of area profiles, point data, and buffers. The results reveal that there is a relationship between Davis' innovative inclusionary zoning program and increased racial integration and access to social services, but there was little evidence of integration for income groups. While inclusionary zoning policy targets income groups specifically, with racial integration as a co-benefit, the sizable student population in Davis may have influenced the results. Overall, Davis' inclusionary policy seems to be successful, but can potentially do even more for disadvantaged groups.

Table of Contents

Abstract	ii
List of Tables and Figures	v
Introduction.....	1
Chapter 1 Literature Review	5
<i>Exclusionary Zoning as a Precursor to Inclusionary Zoning</i>	<i>5</i>
<i>Density Zoning and Segregation</i>	<i>8</i>
<i>Inclusionary Zoning and Integration</i>	<i>10</i>
<i>Measuring Access to Social Services: Walkable Distances and Transportation</i>	<i>16</i>
Chapter 2 Methodology	19
<i>Literature in Practice: Drawing From Existing Research.....</i>	<i>19</i>
<i>Study Design.....</i>	<i>20</i>
<i>City of Davis: Background</i>	<i>32</i>
<i>City of Davis: Case Study.....</i>	<i>33</i>
Chapter 3 Findings	38
<i>Statistical Analysis: Index of Dissimilarity Descriptive Statistics</i>	<i>38</i>
<u>Race</u>	41
<u>Income</u>	43
<i>Spatial Analysis: Demographic Data, Network Data and Geographical Maps</i>	<i>46</i>
<u>Race</u>	46
<u>Income</u>	52
<u>Social Services and Inclusionary Housing Units</u>	<u>58</u>

Chapter 4 Conclusion	63
<i>Implications</i>	63
<i>Limitations</i>	65
Appendix: Study Maps	70
References	114

List of Tables

Table 1: Definitions of Racial Comparison Variables	24
1.1: 1980 Race Comparison Categories	24
1.2: 1990 Race Comparison Categories	24
1.3: 2000 Race Comparison Categories	24
Table 2: Definitions of Income Comparison Variables	26
2.1: 1980 Income Comparison Categories	26
2.2: 1990 Income Comparison Categories	26
2.3: 2000 Income Comparison Categories	27
Table 3: Past Davis Inclusionary Zoning Affordable Requirements 1974-2010.....	35
Table 4: Present Davis Inclusionary Zoning Affordable Requirements 2011	36
Table 5: Segregation Levels of Cities Comparable to Davis.....	39
Table 6: Demographic Comparison of UC Davis and Davis City	40

List of Figures

Figure 1: Racial Segregation Comparison Results	41
1.1: City of Davis	41
1.2: City of Davis Tracts with Inclusionary Affordable Housing	42
Figure 2: Income Segregation Comparison Results.....	43
2.1: City of Davis	43
2.2: City of Davis Tracts with Inclusionary Affordable Housing	44

List of Maps

Map 1: 1990 Percent Non-White by Census Tract	48
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Map 2: 2000 Percent Non-White by Census Tract	49
Map 3: 1990 Percent Low-Income by Census Tract	54
Map 4: 2000 Percent Low-Income by Census Tract	55
Map 5: Social Services in Davis	59

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INTRODUCTION

Approximately 5.7 million low-income households could not find affordable housing, and approximately 1.1 million low-income households were not able to acquire suitable and adequate housing in 2006 (American Community Survey 2007). With the federal government endorsing budget cuts and decentralization in recent decades, the responsibility for financing and planning for low-income housing needs has been shifted to state and local levels of government. Cities have been left with tight budgets and limited resources, creating a poor environment for affordable housing production. In an effort to find new ways to provide affordable housing, cities across the nation are implementing inclusionary zoning programs as a way to avoid litigation for exclusionary zoning practices and to provide for fair share housing requirements.

Inclusionary zoning is regarded as an innovative tool for providing housing for an increasing number of low-income households and has been adopted by about 145 California jurisdictions (California Coalition for Rural Housing 2010). Many studies have shown that the actual number of units produced by inclusionary zoning is impressive: an estimated 29,281 units were built in California between 1999 and 2006 alone (Non-Profit Housing Association of Northern California et al. 2007). But housing supply is not the only goal of inclusionary zoning, a main purpose of the policy is to promote economic, racial and social integration in order to improve the equitable distribution of social networks, social capital and social services. While researchers have focused on the number of affordable units produced by inclusionary zoning, little research has been done on whether the programs have achieved integration.

Advocates for affordable housing support inclusionary zoning programs for their potential to mitigate the consequences of residential racial and economic segregation, especially those of exclusionary zoning policies that have acted to separate low-income minorities from wealthier white populations. Economic and racial segregation patterns have been historically worsened by highway racism, mortgage insurance and the mobility of the affluent. In contrast, inclusionary zoning programs integrate populations that are normally segregated through traditional zoning practice- young families, the elderly, single adults, minorities and low-income households. By requiring that communities accommodate affordable housing, inclusionary zoning provides a wider range of opportunities for disadvantaged groups.

These programs embody themes from community development theory: social capital, social networking and access to social services. Inclusionary zoning policies are framed by the idea that integrating low-income households with higher-income households in the suburbs will allow low-income households to acquire social capital and gain access to higher quality social services through social networking (Byrne and Diamond 2007). Low-income households are given the chance to gain access to resources that may allow them to rise out of poverty. Affordable housing in higher-income areas is usually of better quality with more amenities. Additionally, the safety offered by higher-income neighborhoods relieves low-income households of the stress associated with living in a place plagued by physical decay, social disorder, crime and danger. Low-income households benefit from an increased level of service in sectors such as libraries, public transportation systems, day care, health care and schools, which have been shown to improve math and reading scores for children (Byrne and Diamond 2007). They are exposed to the values and networks of their higher income

neighbors, offering better employment opportunities and positive role models for adults and teens alike. Increased opportunity and improved social networks give lower-income households enhanced political power. Plus, by integrating lower and higher income groups, inclusionary zoning promotes tolerance for those of different racial and economic backgrounds (Byrne and Diamond 2007). Inclusionary housing does not carry the same stigma as other affordable housing developments like public housing and promotes interactions between residents that may lead to acceptance. In all, the policy promotes a range of housing types and occupants with the potential result of more diverse communities.

Yet, within inclusionary zoning policies there is a tension between production and integration. Building affordable housing in suburban areas is often more costly because of higher prices of land and materials. Developers absorb losses from price gaps, which can result in overall housing disinvestment and price increases within the housing market. The result is a tradeoff between building fewer units in wealthier, suburban areas and more units in less wealthy, urban areas. These tensions are apparent in the inclusionary policy requirements, as many local governments specify whether affordable units must be provided on or off-site, by land dedication or in-lieu fee or whether they allow affordable units to be clustered within a development. Options allow the developer flexibility, but also make it possible for affordable units to be located outside of areas where affordable housing was previously excluded. Therefore, the dichotomy between supply and integration is important because it questions the success of the dual goals of inclusionary zoning programs.

My study seeks to address all of these themes in answering the question: Does inclusionary zoning policy in the City of Davis increase economic and racial integration and equitable access to social services? Davis is well known for administering a longstanding

inclusionary zoning program dating back to 1987, which received an American Planning Association award nomination in 2000. To demonstrate whether the city's policy has facilitated integration, I analyzed the placement of inclusionary developments by census tract to determine whether racial and economic minority groups have moved into areas with a greater number of higher income households or white individuals. Further, I discuss the effects of these moves on the distribution of race and income, the proximity of these neighborhoods to social services such as transportation, schools and day care, and the changes in these trends over time. In addition, I physically mapped the locations of inclusionary developments to visually represent the placement and distribution of the units throughout the city. While many studies have theorized the potential benefits of the integrating characteristics of inclusionary zoning, the question remains as to whether inclusionary zoning has actually increased racial and economic integration and facilitated access to social services. Because inclusionary zoning is so widely used, this is an important issue to address in order to determine if this type of program is really a feasible solution to the affordability crisis- does inclusionary zoning produce the results it intends?

In order to provide further insight on the effects of inclusionary zoning on integration through a comprehensive analysis, I first review the literature in order to provide background relevant to the different aspects of my question for study. In the section following, I describe my assessment in which I compare economic and racial integration in Davis census tracts before and after the addition of developments through the inclusionary housing ordinance and compare the location of inclusionary affordable units to the location of social services. Finally, I outline the results of my study to demonstrate whether inclusionary zoning has promoted economic and social integration and facilitated access to social services in Davis.

LITERATURE REVIEW

While many studies focus on the number of affordable units produced by inclusionary zoning and may allude to the benefits of integration generally, few researchers have actually measured the policy's influence on the integration of economic groups, racial groups and social services. However, academics have begun to broach the subject with preliminary observations on the general number and location of inclusionary units, the demographics of the locations of the inclusionary units, and the quantified racial and economic integration successes of inclusionary zoning. These authors outline various methods for determining the effect that inclusionary zoning has on integration. Researchers may use statistical analysis to determine levels of segregation, utilize spatial representation to compare tract-level demographics, affordable unit location or social services location, or compare the demographics of jurisdictions to the demographics of inclusionary housing occupants.

This literature review focuses on the impact of exclusionary zoning and its underpinning for inclusionary zoning and the evidence of density zoning as a cause of segregation in housing. The literature demonstrates that inclusionary zoning has achieved the goal of integration in order to mitigate the segregation caused by exclusionary zoning. Finally, the literature review provides direction for determining whether integration of inclusionary housing has also increased access to social services.

Exclusionary Zoning as a Precursor to Inclusionary Zoning

The concept of inclusionary zoning was derived as a solution to zoning ordinances that acted to exclude certain groups of people. Initially, cities and counties conceptualized zoning as a regulation that could be used to separate uses seen as incompatible, such as industrial power plants sited next to residential homes (Mitchell 2004). Zoning can be used

to protect residents from nuisances that may be potentially noxious, noisy and unsightly, but has often been used to protect certain uses or residents over others. From the start, early zoning practice separated the multifamily tenements that housed poor minority immigrants from the single-family homes of the white bourgeoisie in order to keep property values high and social mixing low (Fulton and Shigley 2005).

These exclusionary zoning practices encompass local government land use strategies that have effectively created zoning restrictions to decrease the production of affordable housing in certain areas and ensure its placement in other areas (Schwartz and Johnston 1983). Cities may engage in exclusionary zoning to placate residents who oppose affordable development, to generate tax revenue and to avoid strain on public services. In fact, a survey by Lowry and Ferguson showed that most local governments prioritized the objectives of preventing utility overload, keeping school enrollment down and maintaining local atmosphere above affordable housing (1992). By restricting land use, building form and lot size, zoning has been used by local governments to dictate what can be built where. Low-density zoning limits, lot requirements, facility improvement fees and high price materials or amenities all add to the cost of development and can make affordable housing development uneconomical. Therefore, localities can use these measures to ensure that multifamily and other affordable developments are limited to poor and/or urban areas.

Based on calculations for a typical metropolitan economy, Inman and Rubinfeld estimated that in any given area communities with incomes of over \$25,000 (comparable to a \$73,069.21 income in 2009) had a zoned density of .57 acres per lot on average (1979:1689; U.S. Department of Labor Bureau of Labor Statistics Inflation Calculator). Therefore, the wealthier areas were zoning for larger, more expensive lots are less likely to be used for

affordable housing. Similarly, Pendall compared zoning codes across metropolitan statistical areas (MSAs) to identify the most common density patterns in the U.S. (1995). A total of 200 jurisdictions capped density at 8 dwelling units per acre. In all, 79 percent of jurisdictions had some type of density limit, though only 36 percent also included an affordable housing program to offset that limit.

By looking at Darien and New Canaan in Connecticut, Newark, New Jersey and White Plains, New York, Jackson documents the exclusionary practices of the wealthier white cities (2000). Darien, one of the wealthy cities, adopted a zoning code in 1924 that slowly implemented restrictions to prevent the construction of affordable apartments and condominiums in the city. Similarly, New Canaan adopted a zoning ordinance in 1932 where all land except for a few designated commercial areas had required four acre minimum lot sizes (p. 193). Historically known for their racism, as documented in the movie “Gentlemen’s Agreement”, these cities purposefully used regulation to keep out certain groups of people (p. 189).

While zoning is not the only cause of exclusionary conditions, zoning has acted as much more than just a rational land use control and physical planning solution. Research has shown that zoning and density regulations have been successful in separating some groups from others. Therefore, zoning has gone beyond its original intent to separate land uses and has also functioned as a method of separating people: renters from owners, poor from rich and minorities from whites. Researchers have demonstrated evidence of the impact of these exclusionary zoning policies on demographic distribution patterns.

Density Zoning and Segregation

The impacts of exclusionary zoning are apparent today in the documented segregation patterns resulting from zoning and density regulations. An early study by the U.S. National Commission on Urban Problems found that 99.2 percent of residential zoned land in the New York Metropolitan area was restricted to single-family dwellings (1969). While there are a number of similar studies from the past five decades, the most important work has been done in just the past few years. These authors have shown that segregation caused by density zoning is still a problem today, despite the fact that many cities have attempted to put an end to exclusionary practices.

By borrowing methods from three previous studies, Rothwell and Massey analyzed racial segregation compared to the density of new residential construction in 49 U.S. metropolitan areas (2009). Their measures included Black-White residential dissimilarity and Black-Black residential isolation indices borrowed from Iceland, Weinberg and Steinmetz (2002) to analyze Census data from 1970 through 2000. They compared this data to results from a density zoning regulation survey issued to local governments in the MSAs by Pendall, Puentes and Martin (2006), combined with the Wharton Residential Land Use Regulation Index with information on regulatory political climate and requirements created by Gyourko, Saiz and Summers (2008). The results showed that anti-density zoning increases African American segregation, while the greater allowable density, the lower the level of racial segregation of all groups (p. 793). In addition, the metropolitan areas allowing higher density development integrated more rapidly than areas with low density restrictions. The areas not permitting higher density zoning actually inhibited desegregation from occurring over time. The results demonstrate a significant relationship between low-density zoning and segregation that is strong under two stage least squares estimation (p. 785).

Rothwell later expanded on his earlier study by using the dissimilarity and isolation indexes to compare White-Black, White-Hispanic and White-Asian segregation as related to the dissimilarity of higher and lower incomes (2011). Rothwell used this method to analyze segregation patterns related to density zoning practices in MSAs. All of the groups were found to be less segregated in areas with a higher permitted density score. Black segregation is significantly higher than other groups, except in areas with the most liberal density limits. Density limits raise housing prices, making it difficult for lower income groups to find affordable housing. Because minority groups earn less than Whites on average, segregation would be reduced if the either income or rent gap was reduced. Most significantly, Rothwell concludes that between 25 and 50 percent of contemporary segregation can be explained by anti-density zoning practices (p. 38). The results are robust to a number of variables.

In a comprehensive study, Knaap et al. used GIS zoning layers and Census data on housing production, rents and occupants combined with state and local regulations to display zoning restrictions by acre, unit and density. The authors combined this data with interviews of local experts to assess zoning's impact on residential segregation (2007). The study focused on six areas: Boston, Miami-Dade County, Minneapolis-St.Paul, Portland, Sacramento and Washington, D.C. The authors found that the jurisdictions with the highest home prices were often the same jurisdictions with the lowest percentage of multifamily units, lowest percentage of residential acres zoned for high-density use and lowest average zoned density. However, in contrast to the other areas studied, the Fairfax and Montgomery Counties of Washington D.C. added large numbers of multifamily units because of their inclusionary zoning programs (p. 53). Two of the top three jurisdictions with the highest median home prices, Arlington County and Alexandria, also had the highest concentration of

multifamily units. These results indicate that the longstanding inclusionary zoning programs of Fairfax and Montgomery counties successful in mitigating some of the detrimental effects of exclusionary zoning practices.

Local governments see inclusionary zoning as a tool for mitigating the segregation and unequal treatment brought about by exclusionary zoning practice. The policy remedies past discriminatory policies by requiring that a certain percentage of affordable housing be built in all developments over a certain size, in all areas. Researchers have shown that inclusionary zoning demonstrates the potential to promote economic and racial integration.

Inclusionary Zoning and Integration

Many studies focus on the detrimental effects of exclusionary zoning, yet few have directly focused on measuring the racial and economic integration achieved by inclusionary zoning. Studies that address the integration potential of inclusionary ordinances are in areas with a significant history related to the policy. Massachusetts enacted the oldest inclusionary zoning program of record in the United States, the Low and Moderate Income Housing Act, to address exclusionary zoning practices. Housing advocates rallied against exclusionary housing for causing racial segregation and inner city decline in 1967 (Krefetz 2001). The Massachusetts legislature, overwhelmingly Democratic at the time, was looking for a way to correct segregation after passage of a controversial act mandating the correction of racial imbalance in urban school districts. Chapter 40B passed in 1969 and allowed local zoning boards of appeals to streamline application procedures for affordable housing developments with long-term affordability restrictions. To qualify for the streamlined application, developers had to meet a housing quota unless a locality had 10 percent of housing set aside as affordable, 1.5 percent of zoned land set aside for affordable housing or a proposed

development that would occupy more than .3 percent of zoned land (p. 388). In the first year of implementing the Executive Order in Boston, eight luxury developments built in wealthy areas included low-income housing units (Brunick, Goldberg and Levine 2003). Today, 25,000 affordable units have been built in 170 communities across the state, including suburban Boston, Worcester, Springfield and Fall River (Krefetz 2001; Myerson 2003).

Krefetz used data from the Massachusetts Subsidized Housing Inventory from 1972 through 1997 to assess the impact of Chapter 40B (2001). Suburban communities still made up 60 percent of the areas with no affordable housing. However, the number of communities with 10 percent or more affordable housing units rose from three in 1972 to 23 in 1997 (p. 393). In addition, the number of communities with no affordable housing dropped 15 percent (p. 393). The inclusionary zoning program prompted local governments to initiate the provision of diverse affordable housing types offering opportunities for a range of racial and income groups in areas across the state.

One of the oldest, most famous and most successful examples of inclusionary zoning is located in Montgomery County, Maryland, one of the top twenty of the richest urban counties in the country. Montgomery county adopted a Moderately Priced Dwelling Unit ordinance in 1973 (Rusk 1999; Schwartz 2010). The Montgomery program produced over 10,000 affordable units in its first twenty-five years (Calavita, Grimes and Mallach 1997:111). Both Rusk and Cisneros found that Montgomery County's inclusionary zoning program was successful in increasing the diversity of race and income in the jurisdiction. In 15 of the 18 Montgomery County planning areas, townhouses that sold for an average price of \$83,706 were sited next to detached single-family homes selling for \$550,000 (Rusk

1999:179). A total of 43 percent of MPDU buyers were minorities, leading to a decrease in the white population from 92 to 73 percent by 1996 (Cisneros 1996:47; Rusk 1999:191).

In 1975, the NAACP of Southern Burlington County brought charges against the Township of Mount Laurel for exclusionary zoning practices that acted to segregate minorities and the poor (Calavita, Grimes and Mallach 1997; King 1982). In the first Mount Laurel decision, the New Jersey court condemned the exclusionary zoning practices enacted by the municipality and ruled that cities had a legal obligation to plan for their fair share housing needs for residents and employees from all income groups. The court also invalidated the zoning ordinance for not promoting public welfare. In 1983, the New Jersey court came back with a second Mount Laurel decision that went even further, requiring the municipality provide for its fair-share housing needs through affirmative programs using mandatory set asides (Calavita, Grimes and Mallach 1997; King 1982). Over 12,000 affordable units were produced in New Jersey in 1988, just five years after the Mount Laurel II decision (Calavita, Grimes and Mallach 1997). The first inclusionary units were constructed in the wealthy, exurban Bedminster in 1984.

In one of the first studies looking at inclusionary zoning's effect on integration, Wish and Eisdorfer used data on affordable housing applicants from the Affordable Housing Management Service to assess the number and characteristics of households located in inclusionary developments in urban and suburban New Jersey (1997). They found that suburban areas contained 71 percent of affordable units (p. 9). Whites occupy 40 percent of all affordable units, including 81 percent of units in the suburbs, and are more likely to occupy the newer and rehabilitated units than other groups (p. 14). Further, when comparing the number of applicants to the number of applicants awarded an affordable unit, whites have

the highest success ratio of 1.08 and Latinos have the lowest success ratio of .36. This trend occurs because Whites make up 70 percent of income eligible households and apply for suburban housing at higher rates than minorities. Wish and Eisdorfer also found low-income households occupied a majority of the affordable units, though moderate-income households had a significantly higher success ratio because of the limited number of low-income units (p. 15). Overall, these results indicate that Mount Laurel's inclusionary zoning program has been more successful in achieving economic rather than racial integration.

Cowan surveyed permit data from the years before and after the implementation of inclusionary zoning programs in four states in order to verify the number of units produced and whether those units were integrated (2006). In Massachusetts, 2,215 affordable units were included in Connecticut and Rhode Island suburban jurisdictions with an inclusionary policy in place (p. 305). However, most exclusionary suburbs still housed less than half the state level of minority households. Integration tended to be more pronounced in areas where minorities and lower-income households were already represented and where a higher level density was permitted. Ultimately, the areas with inclusionary policies integrated three times as fast as other areas, demonstrating that a well-designed policy can affect integration.

Houk, Blake and Freiberg used Census data and occupant data for four jurisdictions in order to document the successes of inclusionary zoning in housing integration (2007). Each jurisdiction had inclusionary developments located in low poverty suburbs, though the developments varied in racial diversity depending on the outreach strategy used. The mixed income development The Metropolitan in Montgomery County, Maryland was 86 percent white. However, the La Costa Paloma in Carlsbad, California was only 47 percent white, as compared to 87 percent in the greater city area (p. 10). Finally, the entirely affordable Ethel

R. Lawrence Homes development in Mount Laurel, New Jersey was only 11 percent white, even though it was located in a city with an 87 percent white population (p. 57). Houk, Blake and Freiberg clearly demonstrate that inclusionary zoning attracted and sited affordable housing with diverse populations in cities where populations were less diverse.

Brown examined city records to illustrate the number and location of affordable units created through inclusionary ordinances throughout the Greater Washington, D.C. Region (2001). A Montgomery County profile of 130 owners of affordable units conducted in 1998 showed a diverse range of race and income, where 79 percent of occupants were not white and 100 percent earned \$36,001 or less (p. 14). Montgomery County has been successful in integrating affordable units, which are located in all but one planning area in the county. In Fairfax County, records of all units purchased between 1993 and 2000 showed that only 26 percent were occupied by whites (p. 14). The average income for affordable unit purchasers was \$34,742, compared to \$91,000 in the county as a whole (p. 14). While Fairfax County's affordable units are well distributed throughout all of the nine magisterial districts, the units are clustered around the Route 1 Corridor long targeted for revitalization. Prince George's County was most successful in integrating its units far from the high-poverty Capital Beltway, but the policy has since been repealed. Montgomery County's older and longstanding inclusionary program produced better results than the newer and more volatile programs in other counties. Still, each inclusionary program demonstrated evidence of racial and economic integration throughout the planning area.

However, Hartnett is unsure of the beneficial effects of inclusionary zoning on integration (1993). The wealthy, white suburb of the Borough of Roseland in New Jersey applied to reduce its fair share of affordable units from 260 to 164 and then promptly

transferred 66 of them to Newark, a town with a large minority population (p.10). The city gave preference to working poor households already residing within the suburb, with the result that only 48 units were available to low- and moderate-income households from urban areas. Because the city gave preference to its majority white residents, there was little opportunity for racial integration. If they had not instituted such a policy, it is likely that at least half of the affordable units would have been occupied by minorities coming from the 64 percent of African American and Hispanics in the surrounding area. Yet the restrictions allowed only a quarter of the units to be occupied by minority households.

Similarly, some authors have questioned whether inclusionary zoning has fostered integration, especially for the lowest income groups. Inclusionary units may be built on expensive land in wealthy, white and/or suburban areas. Often inclusionary programs do not include requirements for the lowest income groups because the cost burden would not be feasible (Hughes and Vandoren 1990). Most of the arguments have been theoretical, without studies supporting them. However, Ellickson did show that inclusionary policies in Irvine, Palo Alto, and Orange County served mostly moderate-income households and few lower income households (1980). Developers would build as many units as possible at the maximum affordable price permitted. In addition, a number of economists have shown that inclusionary zoning programs can cause housing disinvestment and therefore do not build enough units to have an effect on integration. Los Angeles and Orange county produce only eight affordable units per year, the average Bay Area jurisdiction creates only 15 affordable units per year, and the city of Brookline produced just 89 affordable units in two decades (Powell, Stringham and Summers 2004).

Though some studies question the feasibility of inclusionary zoning, overall the literature has shown that the policy has had some success in integrating low-income and minority populations. However, another aspect of integration has yet to be addressed in this research. While inclusionary zoning's effect on integration also refers to the location of social services, until recently few scholars had focused on the relationship between residential housing and social services specifically.

Measuring Access to Social Services: Walkable Distances and Transportation

Inclusionary zoning's goal of racial and economic integration is coupled with the goal of access to social services in order to improve social networks, social capital and access to social services for groups previously excluded through zoning practice. Most research in affordable housing to date has focused on social capital exclusively, but a few studies have compared access to social services between residential areas. These methods inform my own research on the relationship between inclusionary zoning policy and access to social services.

The spatial proximity of social services is important because neighborhood services are often considered more trustworthy to users and reduce the burden of commuting that may prevent use by lower-income and minority populations (Allard 2007). Curley used linear regression with a 15-item index to measure social capital and social service access of HOPE VI affordable housing residents. The index measured generalized trust, shared norms and values, as well as churches, employment and job-training services, libraries, child care, recreation for youth and adults, after-school programs, supermarkets, health care facilities, transportation, food pantries and parks or playgrounds (2010). Curley found that social services were the strongest predictor of social capital, explaining 30 percent of variance in

the variable (p. 92). Local social institutions provide opportunities for interaction between racial and income groups, increasing social capital in the neighborhood context.

Demonstrating another method for social services analysis, Heard, Larsen and Hozumi used ArcView to determine the linear distance of housing clusters from family planning providers (2004). These measures were grouped into eight variables, stratified into quartiles and analyzed using bivariate tables and Pearson's chi-square tests to show whether access to family planning services has an effect on the use of contraception. A greater distance from family planning services was correlated with decreased use of services (p. 175). The results were significant at the 0.2 level. Heard, Larsen and Hozumi demonstrate the importance of proper location of social services. Residents are less likely to use social services if they are not accessible.

Researchers have also identified the threshold of a "walkable distance" to measure social capital. Using a survey of 750 households in the city of Galway, Ireland, Leyden studied the effect of pedestrian-oriented, mixed-use neighborhoods on levels of social capital (2003). A "walkable distance" was defined by the respondent and was compared to four dependent measures of social capital by multivariate ordered logit models. The regression showed that the more walkable neighborhoods did encourage the development of social capital, as neighbors had more opportunities to meet. Similarly, Neckerman et al. used GIS to compare walkable street amenities in poor and non-poor neighborhoods in New York City, including measures of the physical environment, infrastructure and sidewalk amenities (2009). They found that non-poor tracts had better aesthetic quality, access to infrastructure, safety and sidewalk amenities than poor areas (p. 272). Therefore, proximity to

transportation infrastructure and distance from social services are both important factors in determining access, but also demonstrate that access is not equal for all groups.

Allard compared the geographic locations of substance and mental health care, food assistance, job training, education and non-food emergency assistance social services with those of poor populations in Chicago, Los Angeles and Washington, D.C. (2007).

Accessibility was scored using a weighting system that sums the number of clients served as a proportion of the number of poor persons within three miles of a tract as compared to the number of service providers within a 1.5 mile radius of each census tract. The study showed that higher poverty neighborhoods had less access to social services than low poverty neighborhoods at an average of about 40 percent (p. 8). Employment and mental health services have the most extreme disparity, where low poverty tracts have twice the access of high poverty tracts. In addition, tracts with high percentages of African American and Hispanic residents have far less access to social services when compared to tracts with high percentages of white residents (p. 12). Higher poverty neighborhoods that are usually disproportionately comprised of minorities have less funding and less service capacity. Therefore, the results indicate that economic and racial minorities have less access to social services than the majority populations on average.

In a similar study of the same areas, Allard compared the differences in social services between urban and suburban areas, finding that poor populations in urban centers had greater access to social services than poor populations in suburban areas (2004). At the same time, central city areas were found to have much greater demand for social services than suburban areas. These patterns occur because social service providers locate in urban areas in order to efficiently provide for their clientele. With fewer clients in the suburbs

social services are often spread over a wider area, meaning suburban minority groups have less access overall.

Research has shown that social services are important predictors of social capital, yet access is not equal for all groups. It is important to consider the effects of unequal access to social services when proximity to social services ultimately has an effect on whether the public utilizes them. Therefore, “walkable distances” and transportation infrastructure emerge as important factors when addressing the relationship between housing location and social service provision. Inclusionary zoning attempts to diminish discrepancies in service provision, but it is not yet known if the policy has been able to do so successfully.

METHODOLOGY

Literature in Practice: Drawing From Existing Research

Borrowing from the literature, my work uses many of the same methods to determine the relationship between inclusionary zoning and integration. For statistical analysis, I draw from Rothwell and Massey (2009) and Massey (2001) who use the index of dissimilarity to measure levels of segregation of races across tracts. Since integration is the mirror image of segregation, I use this same method to measure levels of integration between racial and economic groups across three decades in Davis census tracts. For spatial analysis, I draw from the work of Knaap (2007) and Krefetz (2001). Knaap used GIS to map the location of inclusionary affordable housing units, while noting the demography of the location (2007). Krefetz used data at the neighborhood level to determine whether affordable housing was located in more segregated or integrated areas (2001). In addition, the Sacramento Scorecard offers a technical method for conducting analysis using z scores to compare concentrations of race, income and other demographic groups (UC Davis Center for Regional Change 2010).

In a combination of methods using mapping and multivariate analysis, Rohe and Freeman compare affordable housing points with demographic concentrations to compare the effects of affordable housing on demographics and to analyze the distribution of each (2001).

Therefore, in my research, I combine the two approaches of statistical and spatial analysis to map the location of affordable housing units and tract-level demographic data for Davis. This was done utilizing a similar method to that of Heard, Larsen and Hozumi, who used GIS to measure the distance between local residences and social service facilities (2004). In addition, by combining a map of social service facilities with a walkable half mile buffer, I display the location of inclusionary housing units as compared to social services. Thus, the same statistical and geographical analyses used in the literature can be combined for a more comprehensive analysis, while using a different lens to interpret the dual results. My work aims to contribute to the discussion and therefore reduce the gap in the literature. In this way, I demonstrate the results of inclusionary zoning's integration objectives.

Study Design

My research takes the form of a descriptive case study of longitudinal, nomothetic data for studying integration over time (Babbie 2008). My main sources of data were the *Neighborhood Change Database* (NCD) and the *1980 in 2000 Boundaries Census CD, 1990 Long Form in 2000 Boundaries Census CD* and the *2000 Census CD* (Geolytics 2003; Geolytics 2004; Geolytics 2002; Geolytics 2000). The NCD and Census CDs normalize Census information between decades using standardized variables and 2000 Census tracts, making it possible for me to compare race and income from 1980 to 2000 (Tatian 2003). The NCD includes data for race from 1980 through 2000, but only has information for family income. The census data for household income was only available from 1980 through 2000

on the Census CDs. The NCD and Census CDs both compare long and short form survey questions between the decades to group variables by characteristics comparable between Census years (Geolytics 2011). The 2000 Census has more categories than the 1980 census pertaining to race. As an example the Asian category in 2000 includes “other Asian” or “other Pacific Islander” as racial categories that are left out of the 1980 census (Ruggles et al. 2010a; Ruggles et al. 2010b; Ruggles et al. 2010c). The NCD and Census CDs normalize these data by creating one large variable that combines these groups into one Asian and one Pacific Islander category that can be compared across decades.

The 2000 tract boundaries for census data in 1980 and 1990 were compiled by combining block group data, then tract-level data and then data from minor civil or census county divisions to ensure that the information was comprehensive for the new boundaries (Geolytics 2011). The basic method for normalizing tracts across decades was to either merge or split tracts to duplicate the 2000 boundaries for 1980 and 1990. When tracts were merged, the data were added. When tracts were split, blocks were weighted by the number of addresses on a street to convert the data to 2000 block boundaries. These block areas were then added together by the tract boundaries. This method ensures that data from all three decades are grouped to cover the same 2000 tracted areas for comparison.

I chose to look at data from 1980 through 2000 for several reasons. First, Davis’ inclusionary housing program was implemented in 1987 (City of Davis 2010). This range of data allowed me to analyze economic and racial integration in Davis census tracts before and after the inclusionary housing ordinance was implemented, to ultimately show differences in patterns of race and income distributions. Looking at data from both before and after the adoption of the inclusionary ordinance allowed me to conduct a form of pretest and posttest

for my question. Although census data from 2010 would provide a more recent analysis of race or income, the tract-level data will not be released until later this year. Due to recent trends in the housing market, it may be beneficial to restrict my analysis to data before the 2010 census due to the unusual characteristics that resulted from the housing market crash.

The most common way to measure integration is through an analysis of census data (Massey 2001). Levels of integration can be determined by calculations of the evenness of the distribution of demographic groups across census tracts in an area, the exposure of minority populations to the majority, the concentration of groups in a given area, the centralization of groups in the “urban core” and the rate of clustering of a group (Massey and Denton 1988:281-3). These are all options to address different articulations of the research question I aim to answer. For the purposes of my study, I focus on evenness for statistical calculations of integration, as it measures the distribution of demographic groups across an area. This method is the most telling indicator of integration as related to the distributive impacts of the location of inclusionary affordable units citywide. Using this method allowed me to combine analyses in order to illustrate relative rates of concentration, centralization and clustering occurrences by creating a map that shows the spatial positioning of affordable units compared with percentages of racial and income groups across city census tracts.

Therefore, I define “integration” as an equal distribution of social groups, or evenness, between census tracts in a city (Massey and Denton 1988). The index of dissimilarity is a widely used calculation that measures the “departure from evenness by taking the weighted mean absolute deviation of every unit’s minority proportion from the city’s minority population, and expressing this quantity as a proportion of its theoretical

maximum” (Massey and Denton 1988:284). For my study, income and race data by census tract will be compared to income and race data for the entire city using the formula below:

$$D = \frac{1}{2} \sum_{i=1}^N \left| \frac{x_i}{X} - \frac{y_i}{Y} \right|$$

Where:

x_i = Population of Group X for Tract

X = Population of Group X for City

y_i = Population of Group Y for Tract

Y = Population of Group Y for City

The measure indicates the proportion of minority and low-income populations that would have to move in order for a city to be perfectly integrated. In other words, if a city has a White-African American dissimilarity index of 50, then fifty percent of African Americans would have to move in order to achieve 100 percent integration. Massey and Denton created a scale to compare levels of segregation, where index values 0 through 30 indicate low levels of segregation, 31 through 60 indicate moderate levels of segregation, and 61 through 100 indicate a high level of segregation (1988).

In order to compare racial categories across decennial censuses, I used the “race bridging” variables from the Neighborhood Change Database (Tatian 2003). Unlike the 2000 census, the prior decennial censuses did not include multiracial categories. The race bridging variables assign the 2000 multiracial groups to single races through a prioritizing system that makes it possible to compare racial change in tracts from 1980 through 2000 (Tatian 2003). In order to include Hispanic populations in my comparison, I used the non-Hispanic data for the remaining racial categories. Because respondents may choose a racial category and a Hispanic ethnicity, using this method allowed me to compare the two while using mutually exclusive categories.

Table 1: Definitions of Racial Comparison Variables (Neighborhood Change Database 2003)

1.1: 1980 Race Comparison Categories	
White	SHRNHW8N: 1980; Total non-Hisp./Latino White population; Table 12:1 - Table 14:2.
African-American	SHRNHB8N: 1980; Total non-Hisp./Latino Black/Afr. Am. population; Table 12:2 - Table 14:3.
Hispanic	SHRHSP8N: 1980; Total Hisp./Latino population; Table 14:1.
Asian*	SHRAPI8N: 1980; Total Asian, Native HI and other Pac. Isl. population; Table 12:6-15.
Native American*	SHRAMI8N: 1980; Total Am. Indian/AK Native population; Table 12:3,4,5.

*Total columns for Asian, Native HI and Pac. Isl., Am. Indian/AK Native Population and Other population had the same total as SHRNHJ8N: 1980; Total non-Hisp./Latino Am. Indian, Asian, Native HI, other Pac. Isl. and other race population; Table 12:3-17 - Table 14:4,5 and were therefore equivalent.

1.2: 1990 Race Comparison Categories	
White	SHRNHW9N: 1990; Total non-Hisp./Latino White population; Table P12:1.
African-American	SHRNHB9N: 1990; Total non-Hisp./Latino Black/Afr. Am. population; Table P12:2.
Hispanic	SHRHSP9N: 1990; Total Hisp./Latino population; Table P10:1.
Asian	SHRNHA9N: 1990; Total non-Hisp./Latino Asian, Native HI and other Pac. Isl. population; Table P12:4.
Native American	SHRNHI9N: 1990; Total non-Hisp./Latino Am. Indian/AK Native population; Table P12:3.

1.3: 2000 Race Comparison Categories	
White	SHRNHW0N: 2000; Total non-Hisp./Latino White population; Table P4:5,14,17,35.
African-American	SHRNHB0N: 2000; Total non-Hisp./Latino Black/Afr. Am. population; Table P4:6,13,18-21,29-32,39-44,50-55,60-63,66-69,71,73.
Hispanic	SHRHSP0N: 2000; Total Hisp./Latino population; Table P7:10.
Asian	SHRNHA0N: 2000; Total non-Hisp./Latino Asian, Native HI and other Pac. Isl. population; SHRNHR0N + SHRNHH0N.
Native American	SHRNHI0N: 2000; Total non-Hisp./Latino Am. Indian/AK Native population; Table P4:7,24.

In contrast, the income categories are not mutually exclusive. In order to compare federally defined moderate and low-income categories, I had to group the census data by the corresponding percentage of area median income for each HUD category (120%, 80%, 50% and 30% of AMI). However, the census data is grouped in salary increments ranging from \$2,500 to \$10,000 in each decennial count, so I was not able to group the data into the exact categories above and below the corresponding percentage of area median income because that number always fell in between one of the census defined categories. Instead, I grouped the categories to include the income ranges that were definitely above and definitely below the corresponding percentage of area median income. Therefore, one census income category is excluded from the analysis because it includes groups both above and below the corresponding percentage of area median income which are impossible to separate.

As an example, the moderate-income measure of 120 percent of the area median income in 1980 was \$19,366.80. However, because the census groups data in increments, the median falls between the category with an income range of \$17,500-\$19,999. Therefore, the grouping contains data on households both above and below 120 percent of AMI. To be sure that I measured only households below 120 percent of AMI for a count of moderate-income households, I only used data from adjacent categories up to \$15,000-17,499. Similarly, to be sure that I measured only households above 120 percent of AMI for a count of households with above moderate-incomes, I only used data from adjacent categories down to \$20,000. Using this method ensured that I would only compare data for targeted groups.

Because I used the HUD income categories based on a percentage of income, I was able to compare income categories across decades. As incomes increase with inflation the percentage calculations incorporate that increase. While the median income differs for each

decade, the HUD income categories are based on the same percentages of median income for each decade. Therefore, it is not the values that are compared but the relative groupings as a percentage of the median.

Table 2: Definitions of Income Comparison Variables

2.1: 1980 Income Comparison Categories	
Above Moderate-Income	\$20,000 - \$75,000 ⁺¹
Below Moderate-Income	\$0 - \$17,499 ¹
Above Low-Income	\$15,000 - \$75,000 ⁺²
Below Low-Income	\$0 - \$12,499 ²
Above Very Low-Income	\$10,000 - \$75,000 ⁺³
Below Very Low-Income	\$0 - \$7,499 ³
Above Extremely Low-Income	\$5,000 - \$75,000 ⁺⁴
Below Extremely Low-Income	\$0 - \$2,499 ⁴

¹ 120% of AMI = \$19,366.80

² 80% of AMI = \$12,911.20

³ 50% of AMI = \$8,069.50

⁴ 30% of AMI = \$4,841.70

2.2: 1990 Income Comparison Categories	
Above Moderate-Income	\$37,500 - \$150,000 ⁺¹
Below Moderate-Income	\$0 - \$34,999 ¹
Above Low-Income	\$25,000 - \$150,000 ⁺²
Below Low-Income	\$0 - \$22,499 ²
Above Very Low-Income	\$17,500 - \$150,000 ⁺³
Below Very Low-Income	\$0 - \$14,999 ³
Above Extremely Low-Income	\$10,000 - \$150,000 ⁺⁴
Below Extremely Low-Income	\$0 - \$4,999 ⁴

¹ 120% of AMI = \$36,678

² 80% of AMI = \$24,452

³ 50% of AMI = \$15,282.50

⁴ 30% of AMI = \$9,169.50

2.3: 2000 Income Comparison Categories	
Above Moderate-Income	\$60,000 - \$200,000 ⁺¹
Below Moderate-Income	\$0 - \$49,999 ¹
Above Low-Income	\$35,000 - \$200,000 ⁺²
Below Low-Income	\$0 - \$29,999 ²
Above Very Low-Income	\$25,000 - \$200,000 ⁺³
Below Very Low-Income	\$0 - \$19,999 ³
Above Extremely Low-Income	\$15,000 - \$200,000 ⁺⁴
Below Extremely Low-Income	\$0 - \$10,000 ⁴

¹ 120% of AMI = \$50,944.80

² 80% of AMI = \$33,963.20

³ 50% of AMI = \$21,227

⁴ 30% of AMI = \$12,736.20

Using these race and income categories to analyze the integration of race and income in Davis from 1980 to 2000, I calculated the index of dissimilarity for the entire city first and then excluding the UC Davis tract, the tracts without inclusionary affordable housing, and the tracts with less than 25 percent of housing units built before 1980. I repeated the index of dissimilarity to assess what variables would impact citywide patterns. This way I could determine if inclusionary affordable housing resulted in integration or if another variable was influencing the pattern change. However, Native American levels of segregation were left out of the statistical analysis because the figures may not be representative. The index of dissimilarity is especially sensitive when comparing groupings with low populations. This was especially true for Davis, where some tracts had no Native American individuals at all.

To add another layer to my analysis, I used ArcGIS to conduct a finer grain tract level comparison of census race and income data against the location of inclusionary affordable housing units (Environmental Systems Research Institute 2010). This same method also allowed me to compare the location of inclusionary housing developments to the location of

social services. Using affordable housing records from the City of Davis, I was able to determine the addresses and construction date of affordable housing developments created through Davis' inclusionary zoning program. I based my research off of a list the city had created for the 2013 housing element update, recording of all of the units created by the inclusionary housing program since 1987 (City of Davis 2010). For the developments on this list, I determined the location of multifamily units by using the apartment list on the City of Davis website and of single family units by using the physical subdivision files located at City Hall (2011b). If I could not find the year a certain property was built in the subdivision file, I used the city records system iaccess-Application Service Provider to determine when the certificate of occupancy was issued. Once I ascertained addresses for all of the inclusionary units, I used Google Earth to geocode them by latitude and longitude so that the data could be ultimately converted to points in GIS (Google 2011).

In addition, I created a comprehensive list of social services in Davis using information from departments at multiple levels of government. I define "social services" as the local provision of aid by a government or philanthropic entity that targets needy children, adults and seniors, especially those with disabilities or low-incomes (California Department of Social Services 2007; City of Davis 2011a; Yolo County 2010). Social services include programs for: substance abuse, mental and medical health care, food assistance, job training, income and employment support, education, transit, child care and family welfare (Allard 2004; California Department of Social Services 2007; City of Davis 2011a; Yolo County 2010). Additionally, social services include non-food emergency assistance including homeless/domestic violence shelters and refugee assistance.

Using information from the City of Davis Social Services Department website and Senior Resources Guide (Davis Senior Center 2011), combined with the Yolo County Health and Human Services Department website (2010) and the California Department of Social Services “Find Services” website tool (2007), I was able to put together a comprehensive list of government-defined social services. Similarly, I was able to geocode the addresses of social services and convert the data into points using GIS. To determine the accessibility of social services, I compared the location of the affordable housing points to the social services points. I define “access” as spatial proximity to a location that is either: 1) within a half mile walkable distance or 2) within a half mile distance to a stop in a transit network served in 15 minute intervals and with a one-way travel time of 15 minutes (a definition commonly accepted by urban planners, see: Agrawal, Schlossberg and Irvin 2008; Sacramento Area Council of Governments 2008; Southworth 1997; Vernez Moudon, Lee, Cheadle, Garvin, Johnson, Schmid, Weathers and Lin 2006). Half mile distances are measured as radii from a central point in the inclusionary affordable unit or development.

Combined with Census data on race and income by tract, I used the point data to spatially represent where inclusionary developments have been built in relation to the racial and economic composition of the location and proximity to social services. Using GIS, I imported city and tract boundary files from the City of Davis GIS database (2011d) and the SACOG regional clearinghouse (2010). I created a base layer showing the percentage of each racial and income group out of the total for each tract, with a separate map for each decade. The maps color census tracts according to racial and economic concentration as illustrated by the standard deviations from the mean.

I classified the race and income data into segments ranging from the lowest concentrated tracts at 2.5 standard deviations below the mean to the highest concentrated tracts at 2.5 standard deviations above the mean (see classification below). Because the percentages of minority populations consistently increase city-wide from 1980 to 2000, this method allowed me to compare general concentration, clustering and centralization patterns across decades. For consistency, the same process was repeated to map percentages of racial and economic groups out of the total for each tract for 1980, 1990 and 2000.

< 2.5	Lowest Concentration
$-2.5 - (-1.5)SD$	Lower Concentration
$-1.5 - (-0.50) SD$	Low Concentration
$-0.50 - 0.50 SD$	Mean Concentration
$0.50 - 1.5 SD$	High Concentration
$1.5 - 2.5 SD$	Higher Concentration
$> 2.5 SD$	Highest Concentration

To analyze the data, I compared the demographics of tracts where inclusionary affordable housing units were sited and the demographic changes that happened in the tracts after the units were built. Combining the analysis of concentration trends from 1990 and 2000 to those in 1980 allowed me to determine which trends were unique to the implementation of the policy and which were apparent across decades. I also noted the location of tracts with high concentrations of minority or low-income groups, and whether these tracts were clustered or centralized near the core.

Using the base layer maps, I created an overlay of points representing inclusionary housing development locations by coordinates. I used different symbols to map single and multifamily developments so that I could note any differences in location patterns. This also allowed me to conduct a finer grain analysis of income concentrations, because moderate and low-income households occupy single family units while low- and very low-income

households occupy multifamily units. Each map shows only the inclusionary developments built during that decade to illustrate relationships between the changes in concentration of race and income groups and the development of inclusionary housing.

Similarly, I created another layer of points representing the coordinate locations of social services, with a different symbol for each type of social service: schools, shopping centers, child care, hospitals, bus routes and food distribution services. Schools include preschools, elementary schools, junior high schools and high schools that are a part of the Davis Joint Unified School District. Shopping centers include all small strip malls including grocery stores, retail stores or service providers. Child and adult care services include facilities that offer daycare or childcare for watching children or adults while their caregiver is away. Food distribution services are facilities that provide food to homeless or hungry individuals through drives or pantries. The remaining services with only a few points per type were grouped into an “other” category, comprised of: mental health, employment services, senior services and other miscellaneous social service types. “Other services” include service types that had too few facilities to be mapped alone: mental health, employment services, senior services and other miscellaneous social services.

Next, I added a half mile buffer around the affordable housing point data to show the walkable distances from each social service, noting which inclusionary housing developments were located within that radius. I combined route shapefiles and schedules from Unitrans to show bus access, using both the areas and times the buses were available. This allowed me to determine the proportion of the total amount of social services accessible to inclusionary affordable developments.

Through these methods, I compared trends in integration and access to social services between racial and economic groups and between inclusionary housing developments and social services. This allowed me to analyze which racial and economic groups the inclusionary affordable units serve and their distance from each other, distance from the center and the general spatial distribution of clustering patterns. The City of Davis offered a unique opportunity for testing these methods in order to determine whether inclusionary zoning has increased economic and racial integration and equitable access to social services.

City of Davis: Background

Davis is a suburban city of about 60,000 in Yolo County, just outside of the California state capitol of Sacramento (American Community Survey 2009). The city has a population that is mainly white (68 percent). Davis' median income is relatively high at \$58,280 as compared to the national median income of \$51,425 (American Community Survey 2009). A tight housing market and high resale and rental prices due in part to a city growth control ordinance have led to consistently low housing vacancy rates due to high demand compared to supply (City of Davis 2010:3-2). Yet, the number of low-income households is increasing and 68 percent of all renter households in Davis already fall in the very low- and low-income categories (City of Davis 2010). This is at least partially due to a sizable student population that continues to add numbers with every school year. Students tend to be disproportionately very-low to extremely-low-income on average.

Davis' inclusionary zoning ordinance has gone a long way to meet the needs of low-income households, as the city has built affordable units in 17 ownership subdivisions and 35 rental projects (City of Davis 2008a). Affordable units have totaled 16 percent of housing starts on average and earned the city ordinance a top spot as one of the ten most successful

inclusionary policies (City of Davis 2008a). About 75 percent of these units have been built through land dedications, while the rest have been provided on-site, and over \$150,000 has been collected through in-lieu fees. The diverse characteristics of inclusionary affordable housing in Davis offer a great example for assessing the impacts of inclusionary zoning.

City of Davis: Case Study

Inclusionary zoning is defined as “a mandatory requirement or voluntary goal to reserve a certain percentage of housing units [as affordable] for lower-income households in new residential developments” (California Coalition for Rural Housing 2010). Lower-income categories are defined as those earning 120 percent or less of the area median income and affordable housing is defined as a housing cost that does not exceed 30 percent of a household’s gross monthly income (CCRH 2010; U.S. Department of Housing and Urban Development 2010). Inclusionary units may also target a percentage of a specific subgroup of low-income households: moderate-income (120 percent), low-income (80 percent), very low-income (50 percent) or extremely low-income (30 percent). Inclusionary zoning policies will also dictate requirements for “the number of units, parcel size, location and type of housing” (Bandy 2010).

The city of Davis has had a longstanding commitment to affordable housing. Although the city adopted a strict slow growth policy in 1973, affordable units were considered an additional allotment outside of the unit allocation awarded to developers (City of Davis 2002; City of Davis 2011e). The city required a mix of housing types and smaller building and lot sizes within each allocation to encourage the development of more affordable units. The council encouraged that these units be affordable to staff determined “low” and “moderate” income categories, though these categories did not always correspond

to state-defined income groups. In the early 1980s, the Designated Low Price Units program was added as a condition to ensure that some units were priced at affordable rates (City of Davis 2002; City of Davis 2011de). However, neither of these early programs restricted occupancy of affordable units to state designated low-income groups nor did they include prolonged resale restrictions (See Table 1 below for more information).

Recognizing the need for an increased commitment to affordable housing, Davis first conceptualized its inclusionary housing program in 1987. The policy is one of the oldest in California and was ultimately adopted as an ordinance in 1990 (See Table 1, City of Davis 2011e). Currently, Davis requires that all new ownership developments build 25 percent of the total units as low- to moderate-income housing and that all new rental developments build 35 percent of the total units as very low- to low-income housing (City of Davis 2008b). Restricted occupancy and resale restrictions were adopted with the ordinance, including a 2004 addition of permanent affordability requirements. These restrictions ensure that the affordable units are occupied by their target income groups and that each unit is occupied by at least one individual that is not a student or by students who are dependents of low-income families (City of Davis 2011e). The same year, the city added another tenet to the ordinance, requiring 10 to 20 percent of units to be affordable to those of middle incomes at 120 to 180 percent of the area median (City of Davis 2011e). However, Davis recently suspended this segment of policy due to the state of the national market, namely the bubble and subsequent burst in the housing market that hit hardest in California, and the resulting economic recession that followed (See Table 2 for 2011 requirements, City of Davis 2011e).

Table 3: Past Davis Inclusionary Zoning Affordable Requirements 1974-2010

Requirement: Housing Type or Regulation	Housing Policy	# of Units in Development	Required Affordable Unit Set- Aside	Required Type of Housing Provision	Income Range Served	
					Price or Percent of AMI	Category
1974						
Affordable Housing	Permit preference based on point system awarded to projects including affordable housing			Duplexes, public housing or coops equally dispersed at the block level	81 to 120% 51 to 80%	Moderate Low
1977						
Affordable Housing	Designated low price housing program- mandatory program awarding developers higher points for past proposals including affordable housing			Duplexes, public housing or coops equally dispersed at the block level	81 to 120% 51 to 80%	Moderate Low
1982						
Affordable Ownership/ Rental	Designated Low Price Unit Program- Price Ceiling	All	1/3	Smaller building and lot sizes	\$60,000	Moderate Low
Regulation	Resale restrictions: first sale restricted to a council defined low- or moderate-income group (not synonymous with state requirements)				N/A	N/A
1987						
Affordable Ownership/ Rental	Inclusionary Housing Program- General Plan Policy	All	25%	10% on-site 10% land dedication 5% self-help	81-120% 51-80%	Moderate Low
1989						
Regulation	In-lieu fee: available for projects of 30 or fewer units				N/A	N/A
Regulation	Resale restrictions: Rental- for term; Ownership- by percent				N/A	N/A
1990						
Affordable Ownership	Inclusionary Housing Ordinance	All	25%	10% on-site 10% land dedication 5% self-help	81-120% 51-80%	Moderate Low
Affordable Rental	Inclusionary Housing Ordinance	5-19	25%	On-site and land dedication	51-80% 31-50%	Low (15%) Very Low (10%)
Affordable Rental	Inclusionary Housing Ordinance	20+	35%	On-site and land dedication	51-80% 31-50%	Low (25%) Very Low (10%)
Regulation	Project flexibility: 1:1 density bonus and credit transfer				N/A	N/A
Regulation	Project individualized program, hardship exemption				N/A	N/A
Regulation	Tenant and buyer screening for affordable units				N/A	N/A
2004*						
Regulation	Middle Income targets added				121-180%	Middle
Regulation	Permanent Affordability-all low, moderate and middle income affordable units must be affordable in perpetuity				N/A	N/A
Regulation	Developer fines and records for noncompliance				N/A	N/A
Regulation	Single-family resale restrictions added				81 to 120% 51 to 80%	Moderate Low
2009						
Middle- Income Ownership	Middle-Income Housing Ordinance Suspended				N/A	N/A

*See current requirements, Table 1

Sources: (City of Davis 2002, City of Davis 2008, City of Davis 2011e; Drdla 2010)

Table 4: Present Davis Inclusionary Zoning Affordable Requirements 2011

# of Units in Development	Required Affordable Unit Set-Aside	Required Method of Housing Provision	Income Range Served	
			Percent of AMI	Category
Affordable Ownership				
5-75	25%	on-site construction	81 to 120%	Moderate (25%)
76-200	25%	land dedication	51 to 80%	Low (25%)
201+	25%	50% on-site construction + 50% land dedication	81 to 120% 51 to 80%	Moderate (12.5%) Low (12.5%)
Affordable Rental				
5-19	25%	on-site construction	51 to 80% 31 to 50%	Low (15%) Very Low (10%)
20+	35%	on-site construction or land dedication	51 to 80% 31 to 50%	Low (25%) Very Low (10%)
Middle-Income Ownership*				
25-35	10%	on-site construction	121 to 180%	Middle
36-49	15%	on-site construction	121 to 180%	Middle
50+	20%	on-site construction	121 to 180%	Middle

* Middle Income Requirements were suspended in 2009 pending further review

Source: (Drdla 2010)

Under the ordinance, the inclusionary housing requirement can be satisfied in a number of ways that affect the location and number of affordable units produced. While normal policy recommends integrating affordable units within on-site development, developers can also opt for off-site construction. For larger projects the city requires a land dedication for some of the affordable units, but the city may also allow the developer to dedicate enough land to the city to cover the entire affordable requirement for development elsewhere (City of Davis 2008b). The units may then be built by the developer themselves or a non-profit corporation. Another option for developers is to pay in-lieu fees for the total estimated cost of the required units (City of Davis 2008b). This option is usually reserved for small downtown projects demonstrating that constructing affordable units will result in an economic hardship. The final option available is a credit transfer, which allows a developer with multiple projects to satisfy their affordable housing obligation by building all of those

units on one site, instead of splitting them between the different sites. Even with all of these alternatives to the inclusionary requirement, the city will still work with the developer to create individualized plans including any number of incentives offered to developers in return for adhering to the inclusionary housing policy.

In addition, Davis will expedite the application review for these developments, saving the builder both time and money by allowing construction to begin at an earlier date and continue with less delay (City of Davis 2008b). The city may allow any number of relaxed zoning standards pertaining to parking spaces or yard setbacks for example, allowing the development to be larger or have more amenities than are regularly approved (City of Davis 2008b). A one-to-one density bonus is also permitted, allowing the developer to build one extra market-rate unit for every affordable unit produced (City of Davis 2008b). This allows a developer to build at a higher density than customary under the zoning ordinance. Davis offers fee deferrals and project subsidies that compensate developers for the profits forfeited in the development of affordable units (City of Davis 2008b). In addition to relaxed standards and alternative production methods, many inclusionary developments have been provided funding totaling over \$40,000 per unit (City of Davis 2011e).

Davis' inclusionary affordable housing program was drafted with two particular goals in mind. Primarily, the city seeks "to promote an adequate supply of housing for people of all ages, income, lifestyles and types of households" (City of Davis 2010). Not only does the city hope to produce housing for all households, including low-income and minority groups, but Davis also seeks "to encourage a variety of housing types that meet the housing needs of an economically and socially diverse Davis" (City of Davis 2010). Davis has modified its inclusionary housing ordinance over the years in an attempt to keep a balance between the

production and integration of affordable housing. In the next section, I determine whether the city of Davis has achieved its goal of affordable housing integration in order to establish whether this careful balance of production and integration has been successful.

FINDINGS

Statistical Analysis: Index of Dissimilarity Descriptive Statistics

Overall, by Massey and Denton's scale, segregation levels in Davis are low (1988). The mean level of segregation for income is 28 and for race is 21, which are both below the low threshold of 30. An index of dissimilarity of 21 between racial groups means that 21 percent of one of the groups would have to move across census tracts within Davis in order for the groups to be evenly distributed within the city. The highest levels of segregation in Davis are still minor moderate scores: 32 for the African American-Asian grouping and 34 for the Above Moderate Income-Extremely Low-Income grouping. To put these levels in perspective, Massey uses the index of dissimilarity to compare segregation levels of a number of cities across the U.S. in 1990 (2001). Some cities have very high segregation levels, like Detroit where the White-African American segregation level is 88. Locally, the San Francisco-Oakland area has a White-African American segregation level of 66.8 and a White-Asian segregation level of 50.1. Even Sacramento has a White-Hispanic segregation level of 37 as compared to Davis' 13. Further, Davis still has lower segregation levels than cities comparable in population size, proximity to an urban center and location of a college within city limits (see Table below, City of Davis 2011c).

Table 5: Segregation Levels of Cities Comparable to Davis

City	White-African American	White-Hispanic	White-Asian
Davis, CA	18	14	23
Chapel Hill, NC	34	30	25
Palo Alto, CA	31	23	21
Evanston, IL	68	49	41
Missoula, MT	27	20	32
Charlottesville, VA	52	25	43

Source: (Frey and Myers 2001)

With high home prices and low vacancy rates, it is surprising that segregation levels in Davis are so low. It would seem that a rent cost burden would exclude low-income households that are disproportionately minorities. Yet, unlike some of the cities above, Davis does not have a supermajority of any one race and is not prone to large racial enclaves (U.S. Census Bureau 1990a, 1990b, 1990c, 1990d). The relative diversity of racial groups in Davis most likely contributes at least in part to the city's lower segregation level. In addition, the City of Davis has zoned many dispersed parcels of land for higher densities (City of Davis 2007). Previous research has demonstrated that restricting density can promote segregation. Because Davis offers multifamily housing opportunities, households have a greater range of choices and may be another factor in Davis' low segregation level. Finally, segregation in Davis is most likely low because the City has had a longstanding commitment to providing a diverse housing stock throughout the area. Since 1974, the City of Davis has required that developers produce housing affordable to a range of incomes, including duplexes and coops.

Generally, levels of segregation for both race and income were lower when the UC Davis tract was excluded. The University is more diverse than the city, with a white population of only 35 percent (see Table below, U.C. Davis 2011). In fact, the Asian/Pacific Islander group actually makes up the majority of students on campus (U.C. Davis 2011).

Because University housing is occupied by a large number of low-income and minority students, the result is that the UC Davis census tract is highly concentrated by these groups. The high concentration of minority and low-income groups in the UC Davis tract drives the measure upward when averaged with lower concentrations in other city tracts.

Table 6: Demographic Comparison of UC Davis and Davis City

Decade	UC Davis	Davis
<i>1980</i>		
White	71%	83%
African-American	2%	2%
Hispanic	4%	7%
Asian	22%	7%
Native American	.5%	.5%
<i>1990</i>		
White	59%	74%
African-American	3%	3%
Hispanic	7%	8%
Asian	21%	14%
Native American	.8%	.7%
<i>2000</i>		
White	46%	66%
African-American	2%	3%
Hispanic	9%	10%
Asian	32%	20%
Native American	.8%	.3%

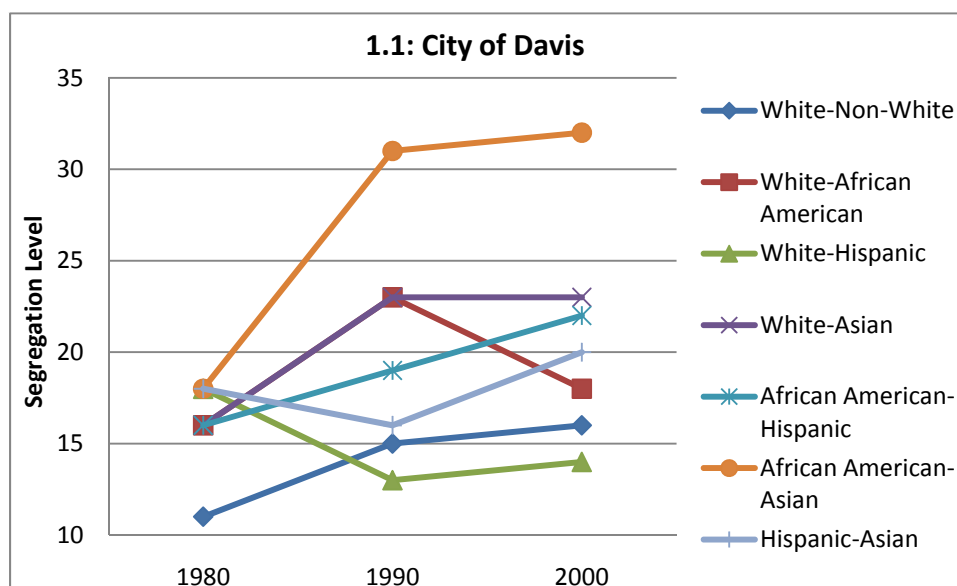
Source: (Neighborhood Change Database; U.C. Davis 1980, 1990, 2000)

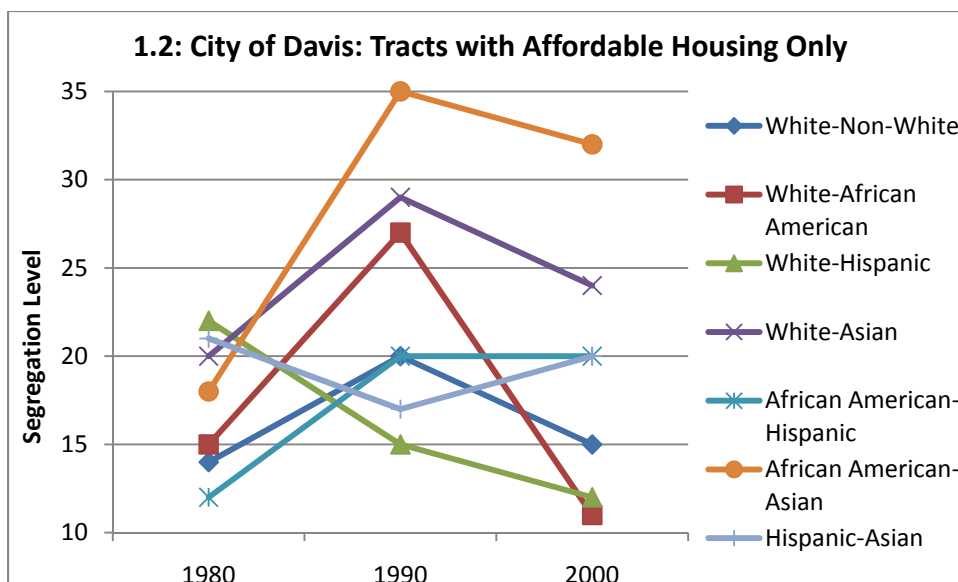
Citywide patterns from 1980 to 2000 show that the mean levels of segregation consistently increased each decade. While the City of Davis has zoned for high densities in many areas, the City also employs growth control methods that limit the location and number of new units (see Measure L, Measure J, Ordinance No.765, City of Davis 2007). Students, University employees and other prospective residents compete for limited amounts of housing units, resulting in a very low vacancy rate that ultimately leads to higher home prices. Students are often cluster together in group quarters and/or in households and choose

similar housing units based on price, proximity to other students and proximity to the University. As the disproportionately minority and low-income student population increased each decade, the level of segregation increased (U.C. Davis 1980, 1990, 2000). Spatial analysis confirms that the location of many of the highest concentrated low-income and minority tracts have been located adjacent to the University in the South. However, while students are almost exclusively low-income they do represent a range of racial groups. This may be why tracts with inclusionary affordable units did demonstrate pattern changes for race but not for income groups as demonstrated in the individual grouping results.

Race

Figure 1: Racial Segregation Comparison Results



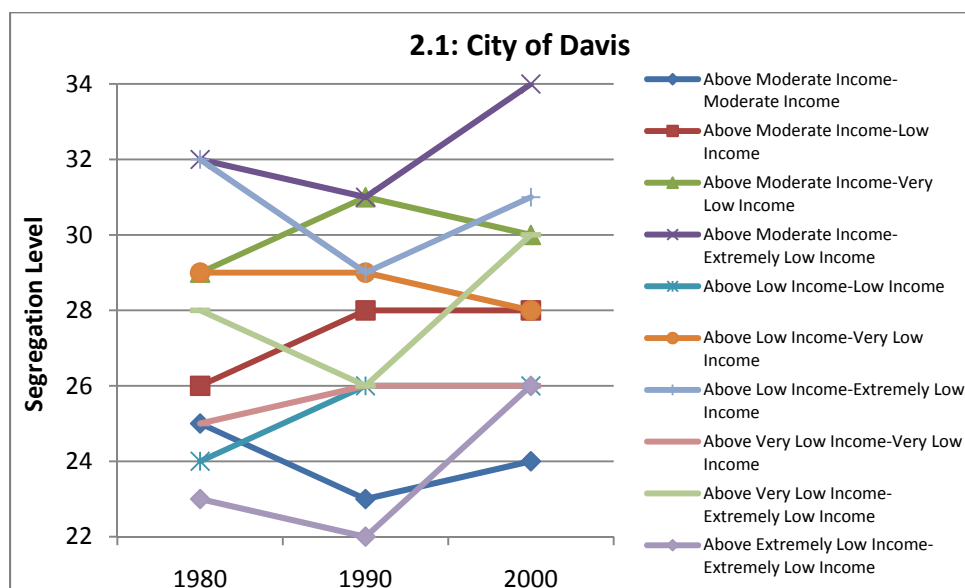


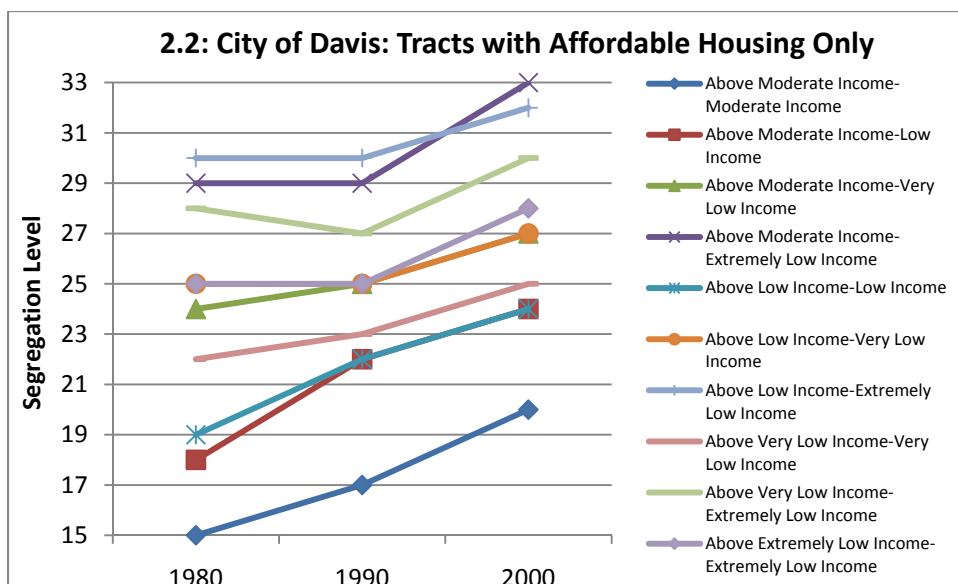
For the citywide measure of the index of dissimilarity, levels of racial segregation generally increase from 1980 to 2000. However, these patterns look very different when analyzing only the tracts with inclusionary affordable units. For these tracts segregation previously increased from 1980 to 1990, but almost all racial groupings decreased in segregation level from 1990 to 2000. This pattern likely occurs because inclusionary affordable units were sited in tracts with low concentrations of racial groups and may have been successful in drawing in minority occupants to redistribute racial groups. An exception to this pattern was a consistently decreasing segregation level for the White-Hispanic grouping across decades, amidst increasing segregation for other racial groupings. Perhaps this occurs because the Hispanic grouping makes up a similar and sizable proportion of individuals both on campus and in the city (ACS 2009; U.C. Davis 2011). Thus, the University may not have as much of an impact on citywide segregation of Hispanics. Similarly, unlike most other racial groups, the city proportion of Hispanics has increased across decades meaning that the group is more likely to be more dispersed (NCD 2003).

Yet, interestingly, the Hispanic-Asian and African American-Hispanic groupings were the only ones without a decreasing segregation level in tracts with inclusionary affordable units. Spatial analysis reveals that this trend most likely occurs because, while most tracts with Hispanic concentrations are located centrally, the African American and Asian tracts are located closer to the city edge. Hispanics experienced increasing integration and centralization, but African Americans and Asians were less centralized and less integrated. Therefore, the integration of the White-Hispanic grouping was not enough to decrease the segregation between Hispanics and other racial minority groups.

Income

Figure 2: Income Segregation Comparison Results





For the citywide measure of the index of dissimilarity, most patterns show that levels of segregation for income increase and then show no change from 1980 to 2000. When the UC Davis census tract is excluded, the dominant pattern change shows income groupings holding constant and then decreasing in levels of segregation. This trend may be due to the fact that the growing University adds more students every year, many of whom live in University housing and range from low- to extremely low-income. Because there are a large number of low-income households and very few higher income households concentrated within the UC Davis census tract, it is not surprising that the citywide levels of segregation would decrease when the tract is excluded. Few tracts in Davis demonstrate this same level of income concentration; therefore, the tract comparison is more even when the UC Davis tract is excluded. Still, tracts with inclusionary affordable housing also exhibit a pattern of increasing segregation across decades for most income groupings. But because this pattern begins before and continues through the addition of inclusionary affordable units, it is most likely the result of the city-wide trend that the policy was not successful in reversing.

Turning to analysis for specific income groups, moderate and extremely low-income groups showed increasing trends of segregation by both measures. While it is expected that extremely low-income groups would be increasingly segregated, it is more surprising that the moderate-income groups are also increasingly segregated. Davis' inclusionary housing policy is not catered to extremely low-income households, which are in the minority. In contrast, moderate-income households, which are far greater in number, have access to units provided by the inclusionary program and may also have access to market rate housing since the group is at the upper boundary of lower income. Both groups experienced an increase in segregation level in the year 2000 following a previous decrease in segregation the decades prior. Moderate income households may be less integrated because single-family units were not deed restricted until 2005. Extremely low-income households may have increased in segregation as the other income groups moved away to occupy the new developments.

Differing from the patterns for moderate and extremely low-income groups, citywide segregation levels for low- and very low-income households actually decreased or stayed constant in the year 2000, following a previous increase in segregation. The inclusionary zoning policy in Davis provides multifamily units priced for very low- and low-income households and single family units priced for low- and moderate-income households. While low-income groups have access to both types of housing, far more multifamily units have been built, providing access to very low-income households. Low-income households did not previously have widespread access to market rate units and instead the inclusionary policy provided these groups with more widespread housing opportunities. This may explain some of the differences in segregation levels for moderate and low-income groups.

Spatial Analysis: Demographic Data, Network Data and Geographical Maps

Generally, the characteristics of tracts receiving inclusionary affordable units and the changes in the tracts after construction of inclusionary affordable units were similar for both race and income groups. Inclusionary affordable units were placed into a majority of tracts at or below the mean concentration for both groups, though this occurs at a lesser rate than that of race. However, a majority of tracts did not demonstrate integration by moving closer to the mean in 2000 after construction of inclusionary affordable units. This may be due to a spatial mismatch in the number of units sited in the tracts with low racial and income group concentrations: too few units would not change the concentration and too many units would change the concentration too much. Although, some specific race and income groups illustrated a pattern where tracts with inclusionary affordable units were more likely to move toward the mean or hold constant at the mean than tracts without those units.

Race

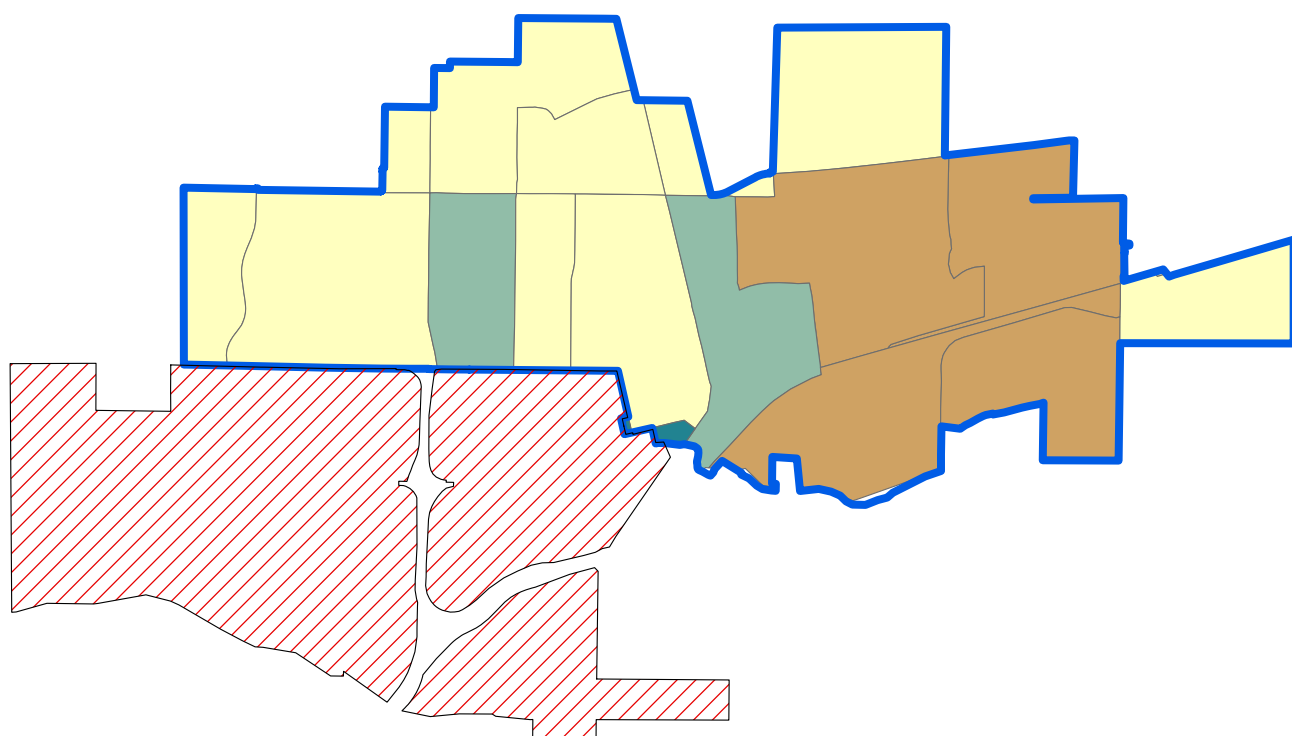
The index of dissimilarity demonstrated that although the citywide concentration of Non-Whites was increasing, tracts with inclusionary affordable units decreased in segregation. Spatial analysis supports these results. In 1980 and 1990, most tracts had a mean concentration of Non-Whites and the same number of above and below mean concentrated tracts; they just moved in location. But after 1990 far more tracts showed above and below mean concentrations than mean concentrations, with the end result that a majority of tracts had below mean concentrations in 2000.

However, from 1990 to 2000, most of the tracts with inclusionary affordable units held constant, while most of the tracts without units moved farther away from the mean in either direction. Further, the Non-White above mean concentrated census tracts became

more clustered in the year 2000, but also began to migrate inward toward the city center.

Therefore, there is some evidence that inclusionary affordable units may have at least stalled the effects of further segregation, since the only tracts increasing in concentration had inclusionary affordable units. As a whole, minorities make up a majority of low-income households and would most likely occupy many of these units (NCD 2003). This may have been the reason that these tracts held constant in a city where other tract concentrations were moving away from the mean.

1990 Percent Non-White by Census Tract



Legend



UC Davis



Davis City Limit

Non-White Individuals



Low Concentration



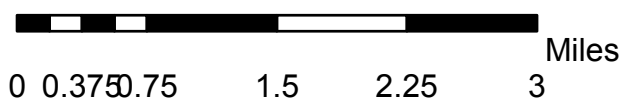
Mean Concentration



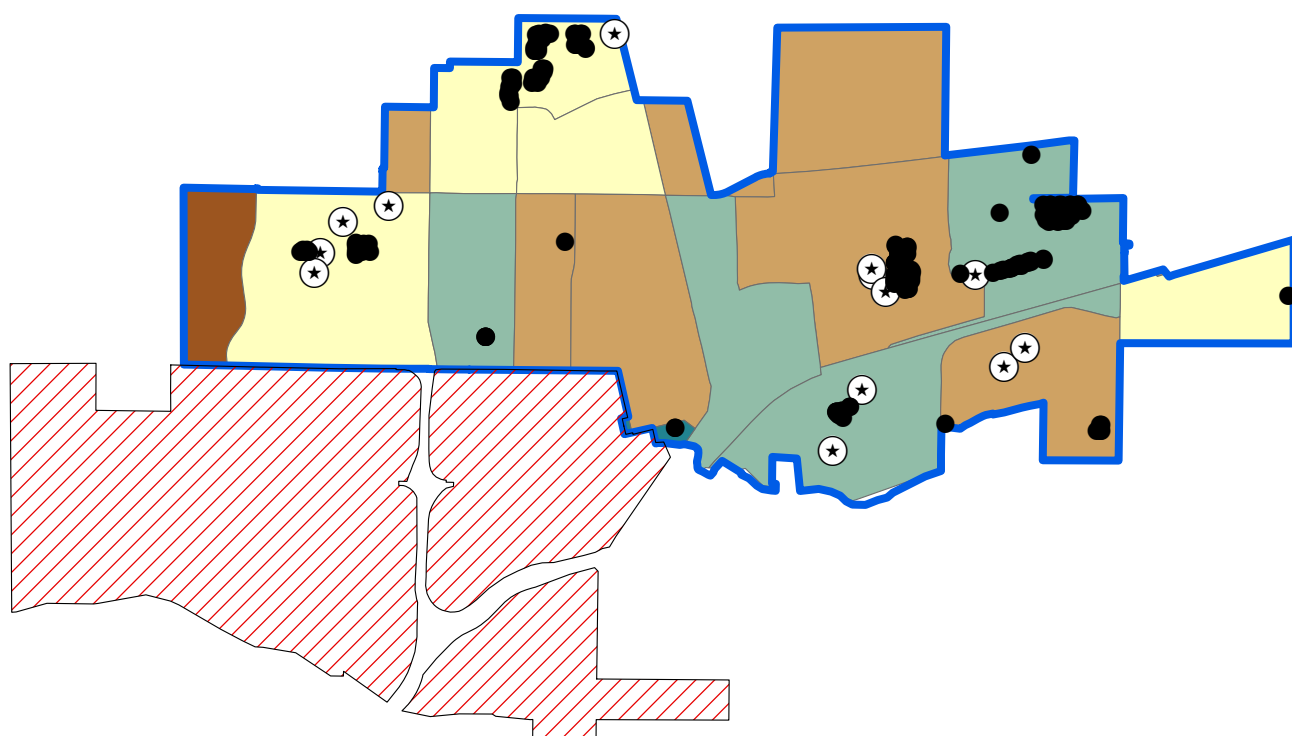
High Concentration



Higher Concentration



2000 Percent Non-White by Census Tract




Legend

- SF Inclusionary Affordable Housing
- ⊛ MF Inclusionary Affordable Housing

 UC Davis

 Davis City Limit


Non-White Individuals

 Lower Concentration

 Low Concentration

 Mean Concentration

 High Concentration

 Higher Concentration

0 0.375 0.75 1.5 2.25 3 Miles



While patterns generally differed depending on the racial group, there were a few similarities in trends. Geographically, the clustering patterns for above mean concentrated tracts tended to follow patterns opposite those of centralization. Additionally, for all of the racial groups except Native Americans, only the tracts with inclusionary housing units increased in concentration.

The African-American group has mixed indicators, but demonstrates evidence of integration when the spatial results are combined with the decreasing segregation patterns apparent in both measures of the index of dissimilarity. By 2000, there were less mean concentrated tracts and more above and below mean concentrations. The end result was that most tracts had below mean concentrations of African Americans. However, from 1990 to 2000 an even number of tracts with inclusionary affordable units moved closer and farther from the mean. This trend differed than that of the rest of city where tracts either moved farther away from the mean or stayed the same. Overall, White-African American segregation levels decreased in 2000.

The tract level patterns for Hispanics are consistent with the results from both measures of the index of dissimilarity where White-Hispanic segregation somewhat decreased, but Hispanic and other minority groups increased in segregation. From 1980 to 1990 there were actually a number of above and below mean concentrated tracts that changed to mean concentrations, so that mean concentrated tracts became a majority. This pattern continued until 2000 when the number of above and below mean concentrations increased. Tracts with inclusionary affordable units followed these same concentration patterns. Geographically, Hispanic above mean concentrated census tracts were not clustered together until 2000, but also migrated inward. Therefore, on a tract level, it appears that the tracts

with inclusionary affordable units follow the patterns in the rest of the city and show mixed indicators for Hispanic integration. This pattern is most likely due to citywide trends caused by increasing Hispanic proportions across decades rather than by inclusionary zoning.

Consistent with the findings from the index of dissimilarity, where segregation of the White-Asian grouping held constant or decreased across decades, there is some evidence that inclusionary affordable units may have at least stalled the effects of segregation. Asian concentrations migrated outward in 2000, while tracts with above and below mean concentrations of Asian individuals became more prevalent across decades. However, tracts with inclusionary affordable units mostly held constant in concentration from 1990 to 2000, while the rest of the city had an even distribution of tracts moving closer, farther and holding constant at the mean. Because the only tracts increasing in concentration had inclusionary affordable units, this may have been the reason that these tracts held constant in a city where other tract concentrations were moving away from the mean.

Finally, even though the index of dissimilarity produced unreliable results for Native Americans, the findings at the tract level are consistent with the figures from the measure. The Native American tracts with above mean concentrations were clustered until 2000. Also differing from the other racial groups, from 1980 to 2000 the number of tracts with above and below mean concentrations remain constant and in the majority. After construction, tracts with inclusionary affordable units mostly held constant in concentration from 1990 to 2000, where the rest of the city had an even distribution of tracts moving closer, farther and holding constant at the mean. However, there is little evidence for the integration of Native Americans. Instead, Native Americans seem to be persistently segregated across decades and the inclusion of affordable units does not change this pattern. Native Americans are the only

group showing no evidence of integration. The Native American group makes up less than 1 percent of the population, so the location of a single family can change the concentration of a tract and therefore the evenness in the city. Similarly, because the group is so small, there may be few Native Americans occupying inclusionary housing units.

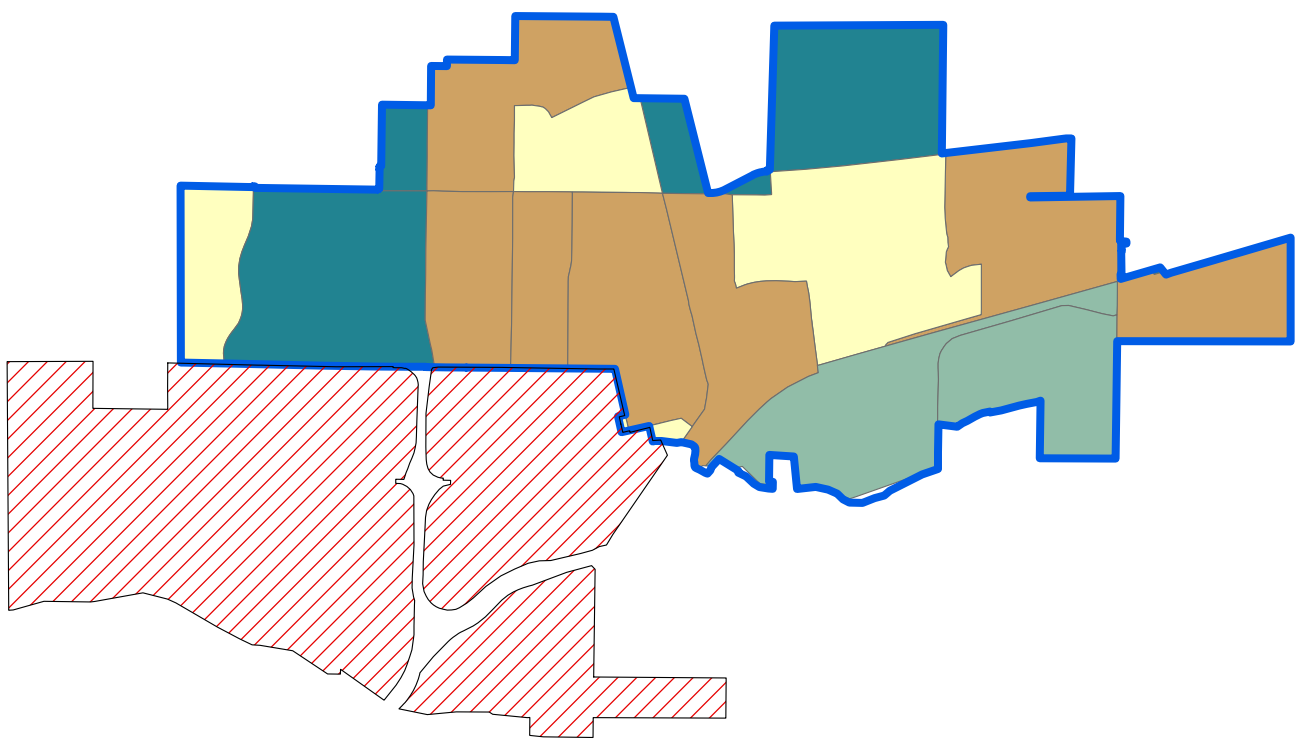
Income

Income patterns did not mirror those found for race. The trends observed were very similar across income groups, most likely a result of using non-exclusive categories for comparison. The census tracts with high above mean concentrations of low-income groups were consistently located on the city edge across decades and groupings. This most likely occurs because the edge areas are farther from services like schools and closer to undesirables like freeways. Rents are usually lower for these reasons, so low-income residents are more likely to occupy edge areas. After the units were built, most groups followed the exact same pattern where all tracts stayed the same and one tract decreased in concentration. The only group deviating from this pattern is moderate-income where fewer tracts held constant and may be why moderate-income groupings were found to be more segregated when using the index of dissimilarity.



The very low-income group showed evidence of integration by both measures, where tracts demonstrated a slight trend of moving closer to the mean in 2000 and the index of dissimilarity measure decreased across decades. However, the extremely low-income group experienced the opposite pattern, where some tracts moved closer to mean concentrations in 1990 but moved farther away from the mean in 2000, and may be why it was one of the most segregated groups in the index of dissimilarity measure. As mentioned previously Davis'

inclusionary housing program provides units affordable to very low-income groups, but not to extremely low-income groups, so these results are expected.





1990 Percent Low Income by Census Tract

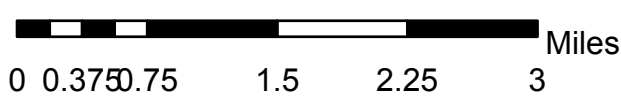


Legend

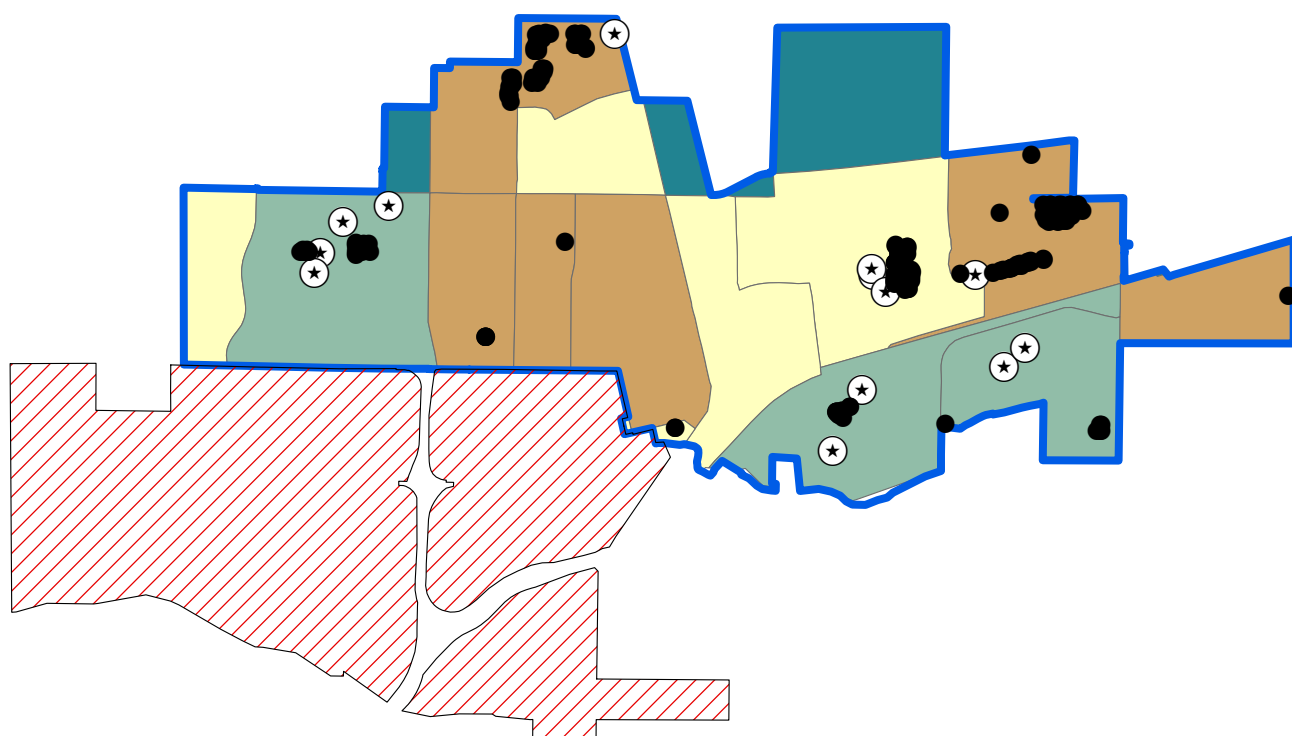
-  UC Davis
-  Davis City Limit

Low Income Households 1990LOW

-  Low Concentration
-  Mean Concentration
-  High Concentration
-  Higher Concentration



2000 Percent Low Income by Census Tract



Legend

SF Inclusionary Affordable Housing

- SF Inclusionary Affordable Housing
- ⊛ MF Inclusionary Affordable Housing

 UC Davis


 Davis City Limit

Low Income Households

 Low Concentration

 Mean Concentration

 High Concentration

 Higher Concentration

0 0.375 0.75 1.5 2.25 3 Miles



Taking the results for race and income groups together, the fact that racial groups show evidence of integration while income groups do not is surprising because inclusionary zoning programs specifically target low-income groups. Racial integration is a secondary benefit because low-income groups are disproportionately minorities. A likely explanation for this result is that the sizable student population has an influence on the integration of income groups. U.C. Davis has increased in diversity since 1980 similarly to the city of Davis, but is more diverse than the city on average. However, the proportions of racial groups are relatively the same for both with the exception that Davis has a much higher proportion of Asians (NCD 2003; U.C. Davis 1980, 1990, 2000). While not all students are racial minorities, the vast majority of students are low-income (U.C. Davis 2011). Interestingly, both families with incomes below the median and the number of seniors have decreased in Davis since 1980 (NCD 2003). This may be evidence pointing to the fact that students are influencing the integration patterns in Davis.

The City of Davis' inclusionary zoning program does not serve students and therefore does not serve a large portion of the low-income households in Davis. Students may only occupy inclusionary units if their parents are low-income or if another individual in the household is not a student. Any progress made by inclusionary zoning in integrating low-income households may be counteracted by the housing patterns of students. Student populations tend to cluster into with other students into units with the same prices and locations, while many higher income households prefer to locate away from areas where students are concentrated. Therefore, while inclusionary zoning cannot mitigate student segregation, the student population can still influence the evenness of tract demographics.

The findings of this study are likely a result of the location of inclusionary affordable units, but affordable housing for minority and low-income groups may also be produced through means other than inclusionary zoning. These non-inclusionary units could have an effect on tract concentrations of race and income groups. However, while a sizable number of the non-inclusionary affordable units were built before the inclusionary program, this number substantially dropped after the policy was implemented (City of Davis 2011b, 2011d). Only 104 non-inclusionary affordable units were built from 1990 to 2000, as compared to 506 units built through inclusionary zoning. In addition, just 6 non-inclusionary units were located in the same tracts as the inclusionary units. Therefore, the presence of non-inclusionary affordable units should not have significantly affected the tract concentration patterns observed using spatial analysis or the index of dissimilarity.

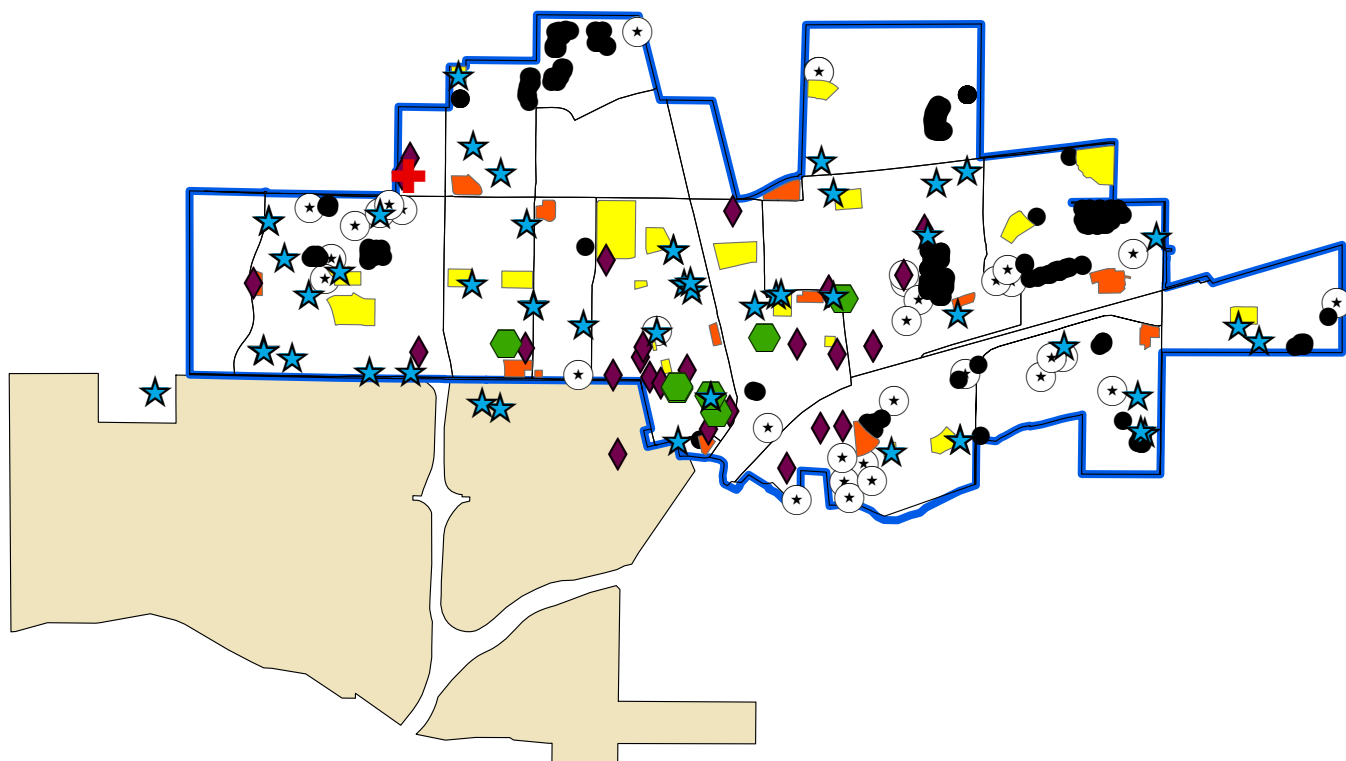
Inclusionary affordable units made up about 9 percent of new housing starts during the period from 1990 to 2000. This means the policy could provide housing for the entire African American population, for example, when estimating that a unit may house three persons on average. However, inclusionary affordable units still only made up 2 percent of the total housing stock in 2000. Though this seems like a small number, the patterns observed using spatial analysis and the index of dissimilarity may have been apparent because inclusionary affordable units made up a more significant proportion of the housing stock in the tracts they were located within. While inclusionary units do not make up a majority of the housing stock, they do make up a majority of the new affordable units built within the city and therefore have the potential to effect tract concentrations of race and income groups.

Social Services and Inclusionary Housing Units

Inclusionary affordable units were located in 87 percent of tracts by 2010, successfully distributing the units across the city. However, these units are overwhelmingly located along the city edge. Though some are more centrally located, their placement follows the Interstate 80 freeway. One possible reason for this trend is that most central tracts were at least 80 percent built out by 1980 (City of Davis 2010). The inclusionary zoning program was applied to new developments later, beginning in 1987. However, housing advocates often lament that the “Not in My Backyard” sentiments of residents often push affordable units to less desirable locations that are noisy and far away. Similarly, developers often site affordable housing on less desirable and less expensive land located near freeways and away from amenities at the city edge. Flexible development standards offered in Davis, such as land dedication and off-site construction, can lead to this trend.

When looking at all types of services together, social services in Davis are generally located more centrally, with distinct gaps on the Northern and Western edges and South of the freeway. Perhaps because the central tracts are also the oldest tracts, social services have been located more centrally in the past in order to serve the most residents. It is possible that services will continue to migrate to the city edge as the tracts along the boundary build out. Social services do not tend to be concentrated in the same areas that inclusionary affordable units are concentrated. Yet, only 5 percent of inclusionary housing units are not within walking distance to social services- meaning that overall Davis’ social services are very accessible to inclusionary housing units. This result most likely occurs because of the size and area that Davis covers. A half mile walking distance goes a long way in a city less than seven miles long and two miles high (Google 2011). Additionally, bus service in the city is far reaching, in order to transport students from all over the city to U.C. Davis.

Social Services in Davis



Legend

- ★ Child Care Services
- ⬡ Food Distribution Services
- ⛶ Hospital
- ◆ Other Services
- Shopping Centers
- Schools
- SF Inclusionary Affordable Housing
- ⊙ MF Inclusionary Affordable Housing
- CensusTracts
- ▭ City Limits
- UC Davis

0 0.35 0.7 1.4 2.1 2.8 Miles



However, access to social services differs by service type. There is only one hospital providing health care services within the city of Davis, which is actually located near one of the largest concentrations of inclusionary units. The city only has seven food distribution service facilities in all, located primarily in central south Davis. Food distribution centers are often provided by churches, which are longstanding city institutions, and are therefore often located in the older central city tracts. Though they are few in number, these facilities serve 15 percent of inclusionary housing units. “Other” social services are located almost exclusively in central Davis, where 41 percent of inclusionary housing units are not within a walkable distance from other services. These services have the highest rate of provision by government agencies and therefore tend to be located near city hall in central Davis.

While schools seem to be evenly distributed on the map, the largest clusters of inclusionary affordable housing units are not located within a half mile distance. Overall, 35 percent of inclusionary housing units do not have reasonable access to schools. All of the schools in Davis are located within walking distance to at least one inclusionary affordable development. But because the schools tend to be located more centrally and inclusionary affordable units tend to be located on the edges, schools are out of reach for many of these developments. This pattern may occur because schools are usually sited near a greater number of neighborhoods, and therefore more centrally, in order to reach the most children.

Child and adult care services are the most prevalent social service in Davis, where 7 percent of inclusionary housing units are not within a walkable distance from facilities. A total of six child care facilities are not reasonably accessible to any inclusionary points or units, but this is more a result of the abundance of social services. Many inclusionary units are located near multiple facilities within a half mile distance. Child care services are

probably most prevalent and widespread because they are offered through a number of venues including schools, large private businesses and small home care businesses. At first glance, shopping centers seem to be located away from many of the inclusionary housing points. However, they are located near the greatest concentrations of points, so that only 25 percent of inclusionary housing units are not within walking distance to shopping centers. Only one shopping center is not within walking distance for any inclusionary affordable units. The other shopping centers tend to be well dispersed throughout the city, reaching both the edges and center of Davis. This trend may occur because the City of Davis has zoned for shopping centers in certain areas so that a variety of neighborhood centers are economically vibrant (City of Davis 2007). Shopping centers are less widespread than schools but reach a greater number of units, demonstrating the importance of both the quantity and location of social services.

Transit is the most dispersed social service in Davis. Only 36 inclusionary housing units are not within walking distance to a bus stop, which is a negligible percentage. However, it is interesting that bus routes tend to go around the inclusionary affordable units rather than provide service within the development. Service also tends to fall short of reaching the far edges of the city. This is especially true in North Davis. Saturday service is limited almost exclusively to the center, but still manages to reach the majority of inclusionary affordable units. Only 10 percent of inclusionary housing units are not within walking distance to a bus stop with Saturday service. These results are not surprising as the bus service is dependent upon student class times and U.C. Davis destinations.

Bus coverage is far reaching in Davis because all of the routes lead toward the core to offer service to and from UC Davis for students. The P and Q bus lines circle the entire

length of the city core in 40 minutes round-trip. Therefore, almost all of the inclusionary affordable units that have bus access, which are within a half mile walkable distance from a stop, can reach social services within a 15 minute bus ride. There are only two exceptions to this pattern. The northernmost multifamily development in Northstar does not have bus access. The other exception is that the rest of the single family northernmost units in Northstar have an 18 minute bus ride to the nearest food distribution service.

There is no difference in service frequency between the bus routes serving inclusionary affordable units and those that do not. In fact, all of the routes with the most frequent service serve the inclusionary affordable units and the routes with the least frequent service do not. Normal service hours run from 7:00AM to 7:00PM with limited night service until 10 or 11:00PM. One issue with bus service across the board is that service is cut in half during the summer, because Unitrans is generally catered to the student population. Services are cut equally across the city, but still pose a concern for occupants of inclusionary zoning who may depend on it. In the summer, most service drops to a frequency of one line per hour and the Monday-Thursday night service is cut completely. Low-income individuals, who are more likely to be minorities, are more transit dependent and rely on transit that caters to commuters with non-traditional hours (SACOG 2008).

Overall, the findings outlined in these sections indicate there is evidence that inclusionary zoning may have influenced integration for many racial and some economic groups and access to social services, but that the policy could do more to combat exclusionary policies of the past that have led to segregation. The challenge for the future is to translate these findings into successful modifications for housing policy. The next section

describes what can be procured from these findings, both the implications and limitations of the research.

CONCLUSION

Implications

This study has attempted to answer the question of whether inclusionary zoning has increased integration of racial and economic groups and facilitated access to social services. The results confirm that there is a relationship between inclusionary zoning and integration, demonstrating that the policy may have had modest positive effects on integration in Davis. What inclusionary zoning has done well is siting inclusionary affordable units within tracts with below mean concentrations of race and income, integrating racially concentrated tracts within the city center, locating inclusionary affordable units in a majority of tracts by 2010 and providing those units with access to social services. There are indicators that Non-White, Hispanic, Asian, African American, low-income and very low-income groups experienced integration, many potentially as a result of inclusionary zoning policy.

What inclusionary zoning has not done so well is centralizing tracts with high concentrations of income groups or redistributing racial and economic groups evenly. While segregation in Davis is low overall, it is clear that segregation levels are not equal across racial and income groups. The low-income and very-low income groups only show minor indicators of integration and the rest of the income groups show no indicators of integration. Additionally, there is no evidence of integration for the Native American group.

Therefore, Davis' innovative inclusionary zoning program seems to have demonstrated success in increasing racial integration and access to social services, but has the

potential to do more. The City of Davis can improve upon the inclusionary zoning program and further the goal of integration by implementing best practice policies (California Affordable Housing Law Project of the Public Interest Law Project and Western Center on Law and Poverty 2002). The central city has 80 percent or more of units built before 1980 and the City of Davis limits the amount of development in this area. By removing these constraints and instead offering incentives for affordable infill development in the core, new development may centralize units and therefore race and income groups as well. While the City's program does have strict program requirements that target more households of lower incomes as compared to other localities, the city also provides flexibility for affordable housing provision as a cost offset to developers. Eliminating some of the programs that give developers flexibility, such as the in-lieu fee, land dedication, credit transfer or off-site construction, will give the city more control over the number, type and location of units developed. The alternative provision methods allow developers to construct affordable units on another plot in the city, or by deeding land or money to the City to develop affordable units in partnership with a nonprofit organization elsewhere. Therefore, affordable units may not be developed in wealthier areas or in market rate developments. The inclusionary zoning program will have more influence on integration by requiring that all units be constructed on-site and therefore within the target areas. Finally, adding a set-aside for extremely low-income groups rather than middle income groups could increase the integrative potential of the program. Inclusionary zoning programs do not often serve the extremely low-income group because the developer cost burden for providing affordable housing for these households is so high. By instituting an extremely low-income set aside rather than reinstating the middle income set aside, the City of Davis could provide affordable housing

for a greater range of low-income groups and ensure that extremely low-income households are integrated within market rate developments.

Although the relationship between integration and inclusionary zoning as demonstrated in this study is modest, these preliminary results should not be discouraging to policymakers. Overall, Davis has exhibited that inclusionary zoning programs can in fact integrate racial minority groups, contradicting the arguments of many anti-inclusionary zoning groups. These conclusions should be a lesson for improving inclusionary zoning programs, influencing future housing policy, and structuring inclusionary policies to better achieve integration.

Limitations

While my study has provided some much needed insight into the effects of inclusionary zoning on racial and economic integration and access to social services, there are also limitations to my research. Most importantly, with the release of 2010 census data this fall, the data I used in this study will no longer be up to date. The trends that I have identified may have changed during the past decade, especially if inclusionary zoning had a delayed effect. Due to the time restriction of the thesis deadline, I was unable to wait for the most current data and had to proceed with what was available to me. However, my study could be compared to an analysis using the most recent data in order to determine whether the housing market crash influenced these patterns.

The fact that the index of dissimilarity statistics for Native Americans were unreliable is a regrettable loss. While I was able to include Native Americans in the tract level analysis, it would have been beneficial to compare the results to general citywide patterns. Similarly, the census data groupings limited my analysis of income. Some data were excluded in order

to compare HUD groupings using census categories. Further, the categories for the low- and high-income groups were not mutually exclusive (ex: 80 percent and below AMI includes all households 50 and 30 percent below AMI), which averaged patterns across income groups. This meant that I could not compare the segregation patterns of low-income groups from each other, which could have illuminated significant integration patterns. Finally, single-family inclusionary affordable units did not include asset caps until 2005. A number of these units may have been lost to market rate occupants during the study period between 2000 and 2010. Though this does not affect tract concentration analysis much because the majority of inclusionary tracts include affordable units, this fact could affect concentration patterns for moderate income households.

Another limitation of this study is the data itself; the reliability of the study is based on the source and character of the existing data (Babbie 2008). There may be gaps or limitations in the data that cannot be controlled for and must be contended with in an analysis. The Census distributes data in certain groupings that limits the way the data can be used. In studies of integration, some scholars have shown that differing units of analysis in Census data can return noticeably different results (Van Valey and Roof 1976). Tract-level comparisons have been shown to differ from block group or block-level comparisons. The problem arising from using data in one census boundary is the ecological fallacy that “patterns of behavior at the group level do not reflect corresponding patterns at the individual level” (Babbie 2008:109). What may be true in a tract may not represent trends occurring in each neighborhood.

Using block versus tract data can also produce different outcomes in an analysis. As the groupings become smaller, the amount of data kept confidential increases. However, the

lower levels of data for race are often inaccurate because there are privacy issues with identifying the only person of a given race at the block level. When there are very few individuals of a certain race, the census will leave out this data for the block or block group. This is true for Davis, especially when looking at data from decades past. Yet, these are all common problems that arise when analyzing census data. The aggregate trends can say a lot in an analysis, as long as they are not incorrectly applied on the micro level.

Ultimately, the main issue facing my research is connecting inclusionary zoning to the analysis of integration so that only the targeted variables are measured. The main objective of this task is controlling for outside variables, the external validity of the study (Babbie 2008). Household moving rates both into and internally within Davis and other housing policies regulating housing or affordable housing location could skew the results of the effect of inclusionary zoning on integration. The instrumentation used is a broad measure, affecting the internal validity of the study, and logical reasoning is needed in order to sort out the analysis (Babbie 2008). I tried to control for some of these variables by repeating the index of dissimilarity measures to show patterns in tracts with affordable housing and with 80 percent or more units built before 1980. However, the patterns observed from the two decades after inclusionary housing units were built (1990 to 2000), especially those that reverted from a previous trend, may not continue into the next decade. Having the 2010 data would have allowed me to compare data from multiple decades after the implementation of inclusionary housing.

One issue in looking at economic and racial integration in Davis is the unique problem that the University poses. Inclusionary zoning programs do not usually target student populations, though many students would qualify as extremely low-income, because

many students are dependents of their parents. I tried to control for this by analyzing trends occurring with and without the UC Davis census tract, but it is very difficult to completely exclude students from analysis. Because Davis is categorized as a university town, the study will ultimately not be generalizable to other cities except for comparable college areas. Yet, the exemplary characteristics of Davis' inclusionary housing program make the city a worthwhile area of study, as a true test of inclusionary programs at their finest.

That being said, there are many opportunities for further research. Clearly, this study could be repeated using the most current data from the 2010 census when it becomes available. In future research, Native American individuals could be included in the segregation analysis by using another measure that is less sensitive to small populations. Using a different data source than the census for income may also allow a more precise comparison of HUD income levels. A finer grain analysis could compare data on the demographics of the occupants of inclusionary affordable units to the tract level patterns I have identified. This study could also be compared to a block group analysis of racial and economic integration to note patterns at a neighborhood level.

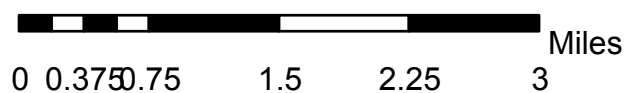
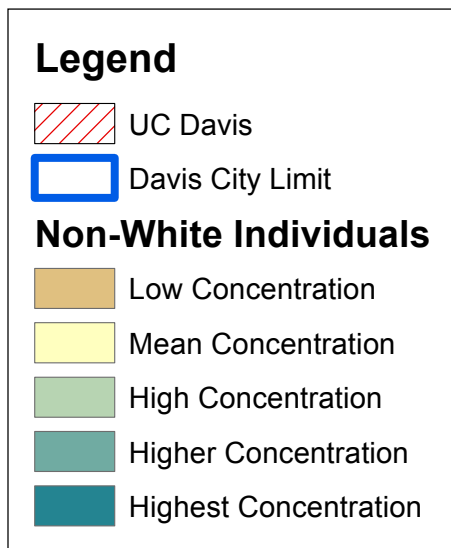
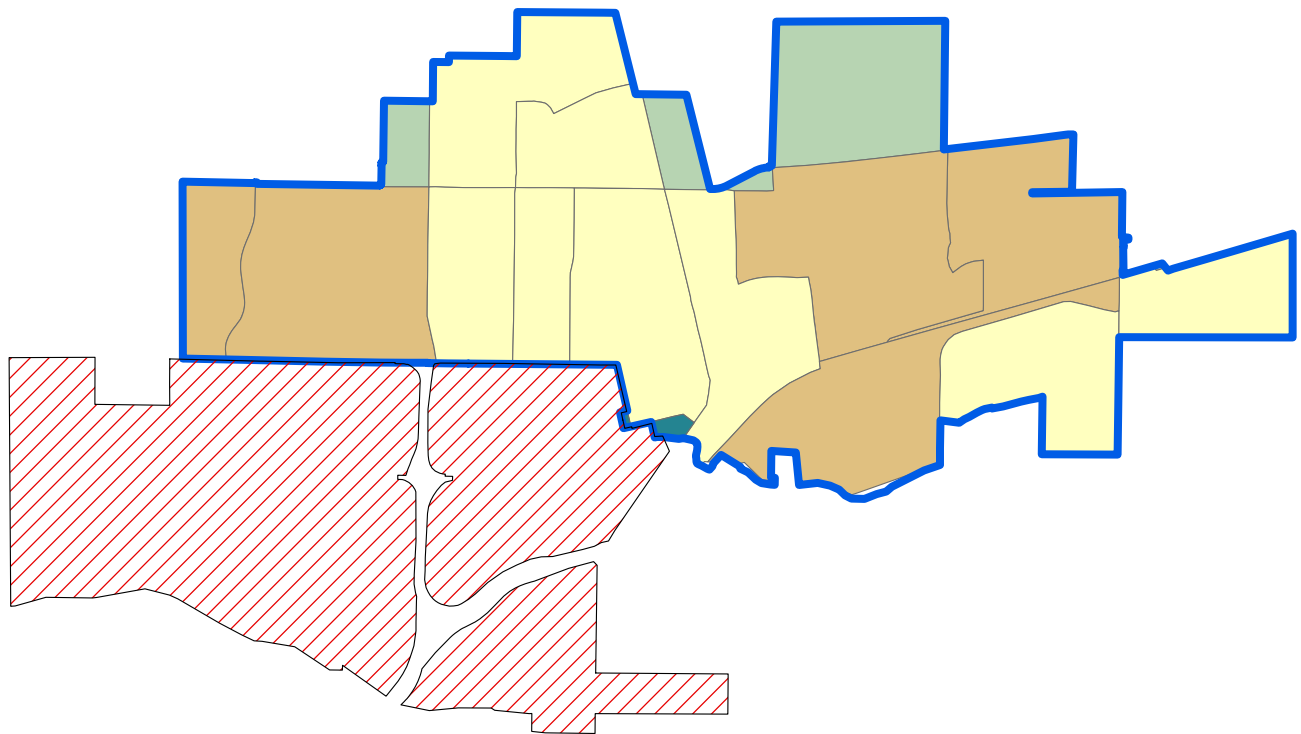
Finally, in building off of my research, there are a number of related research questions that one could ask: What are the demographics of inclusionary housing occupants and are they representative proportionally to the demographics of their tract or the city as a whole? Does access to social services affect use by inclusionary housing occupants? In cities with a production focus, does this priority sacrifice inclusionary housing unit integration? How do Davis integration levels and access to social services compare to other cities with inclusionary zoning policies and do these patterns differ from cities that do not have inclusionary zoning policies?

Because inclusionary zoning is quickly becoming a significant part of California affordable housing policy, it is important to determine whether or not the policy is achieving what it intends to promote. An analysis of Census data that measures both the rates of economic and racial integration and access to social services before and after the adoption of an inclusionary zoning ordinance does just that. For the majority of scholars studying integration, this type of statistical measure is the method of choice and I intended to build off of their work. Though much prior research has discussed the calculation of integration rates and their applications, few of yet have utilized this measure in an evaluation of inclusionary zoning policy. Thus, my critical examination of these variables in the city of Davis, with its exemplary inclusionary zoning policy and proven success in affordable unit production, has shed light on a subject that has yet to be undertaken by a majority of scholars.

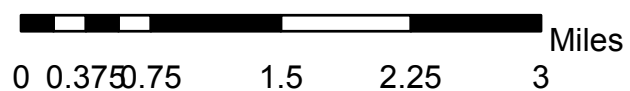
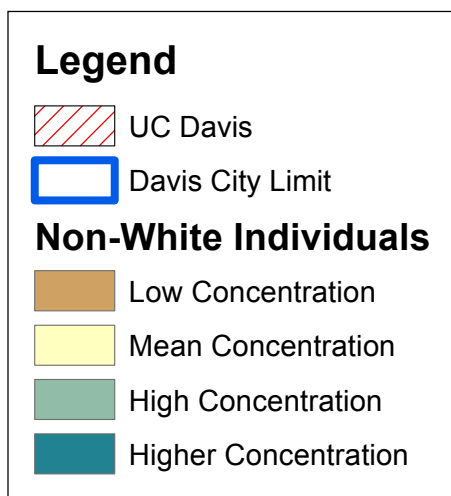
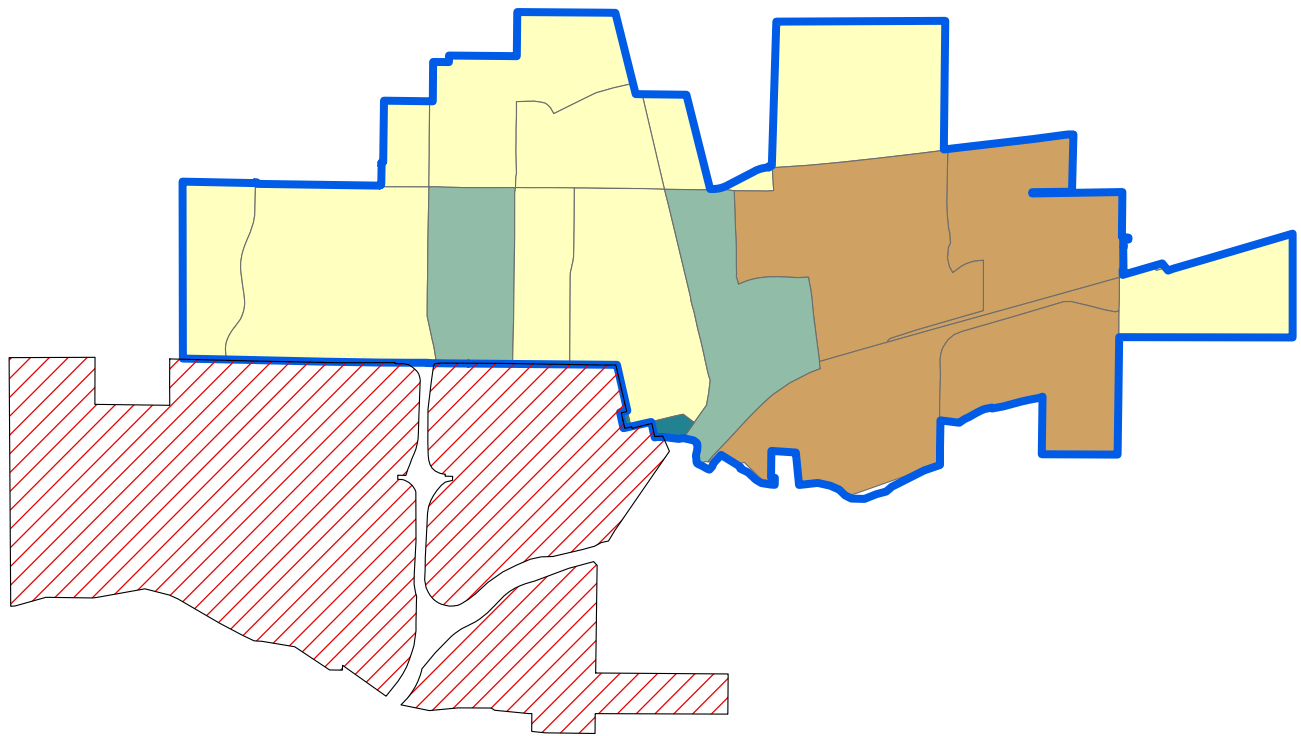
APPENDIX: STUDY MAPS

1980 Percent Non-White by Census Tract

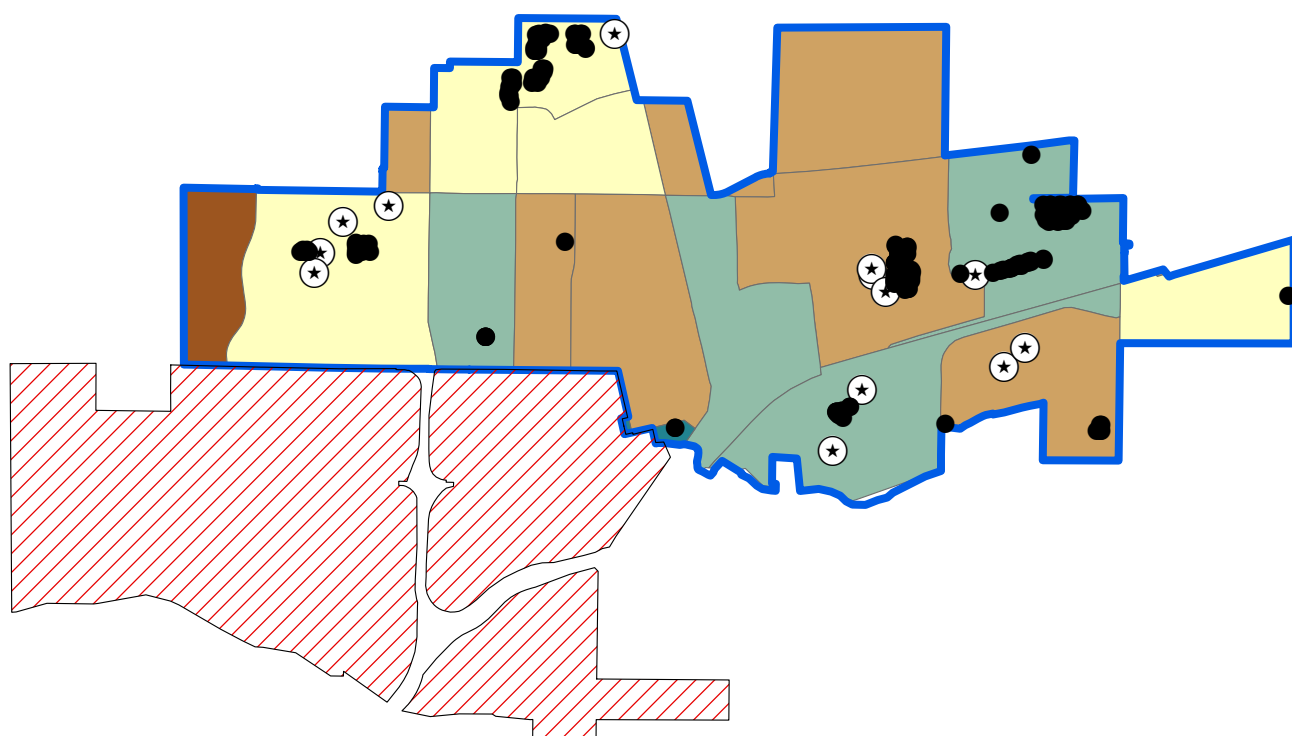
71



1990 Percent Non-White by Census Tract ⁷²



2000 Percent Non-White by Census Tract




Legend

- SF Inclusionary Affordable Housing
- ★ MF Inclusionary Affordable Housing

 UC Davis

 Davis City Limit


Non-White Individuals

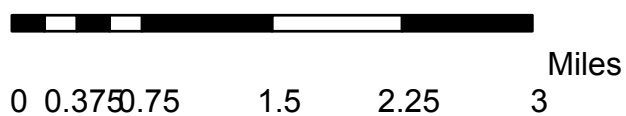
 Lower Concentration

 Low Concentration

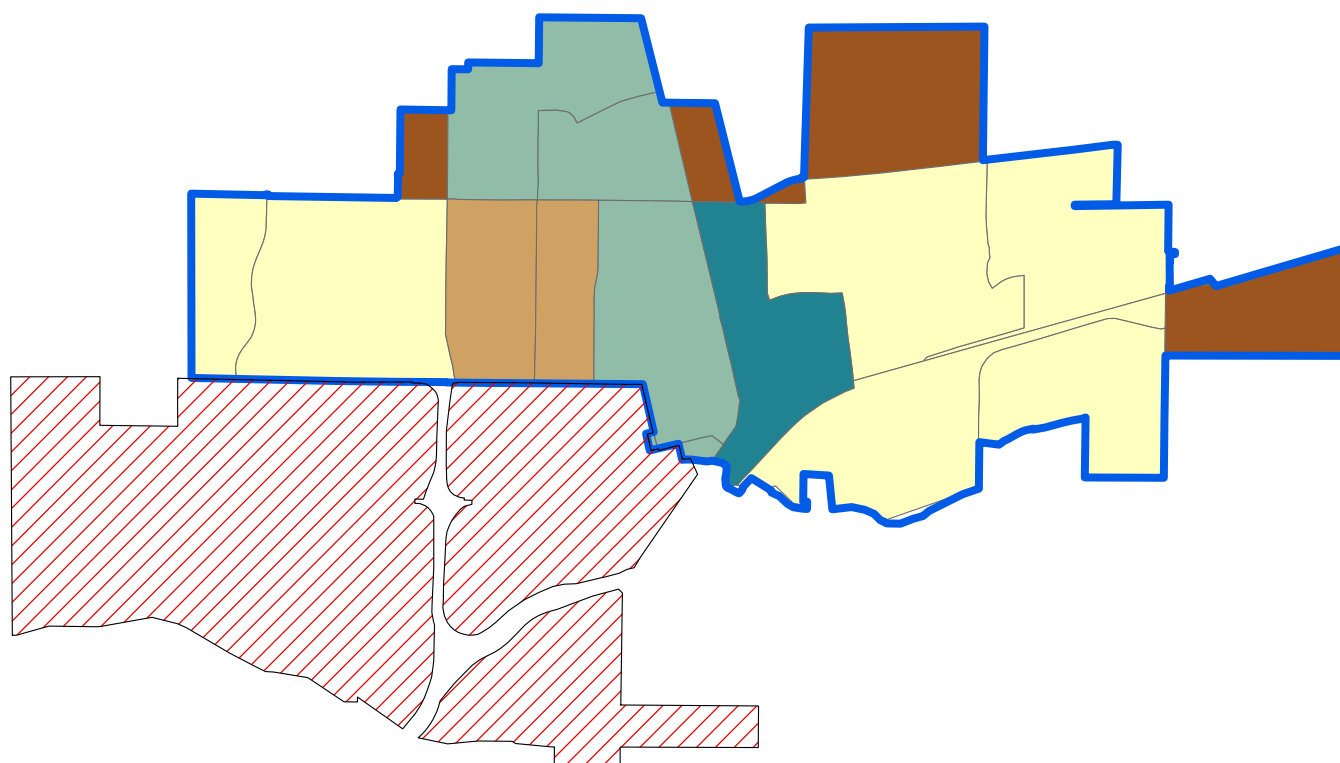
 Mean Concentration

 High Concentration

 Higher Concentration




1980 Percent African American by Census Tract



Legend

 UC Davis

 Davis City Limit


African American Individuals

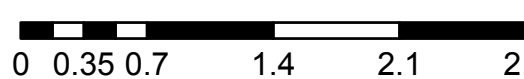
 Lower Concentration

 Low Concentration

 Mean Concentration

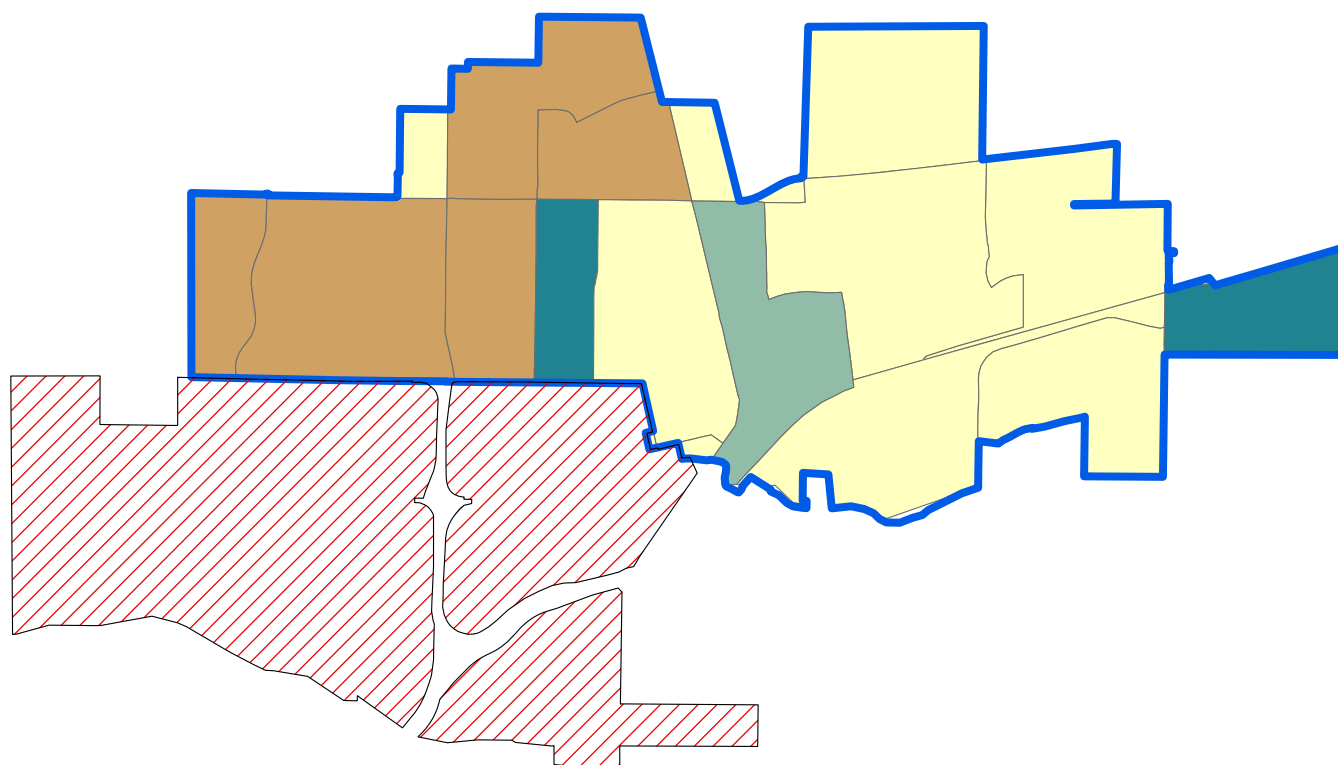
 High Concentration

 Higher Concentration

 Miles
0 0.35 0.7 1.4 2.1 2.8




1990 Percent African American by Census Tract



Legend

 UC Davis


 Davis City Limit


African American Individuals

 Low Concentration

 Mean Concentration

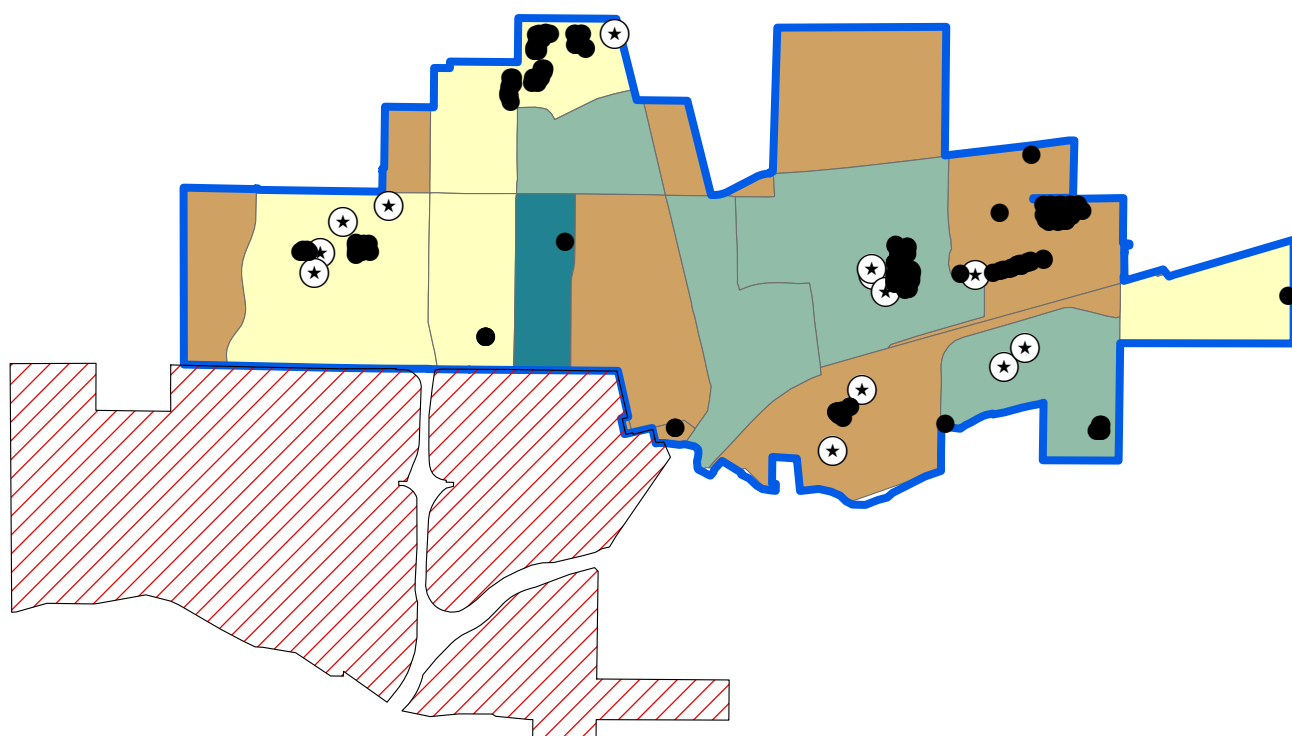
 High Concentration

 Higher Concentration

 Miles
0 0.35 0.7 1.4 2.1 2.8



2000 Percent African American by Census Tract



Legend

- SF Inclusionary Affordable Housing
- ⊛ MF Inclusionary Affordable Housing

 UC Davis


 Davis City Limit

African American individuals

 Low Concentration

 Mean Concentration

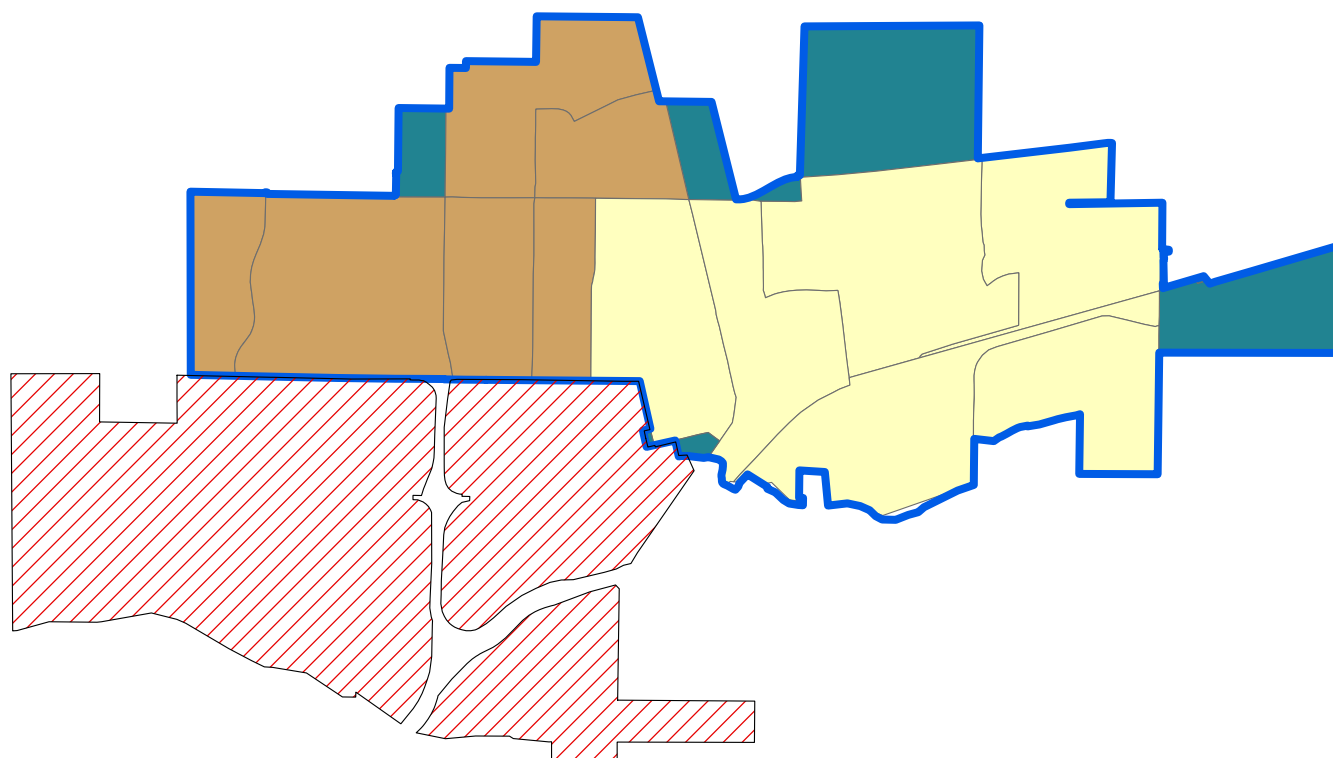
 High Concentration

 Higher Concentration

0 0.375 0.75 1.5 2.25 3 Miles




1980 Percent Hispanic by Census Tract



Legend

 UC Davis


 Davis City Limit


Hispanic Individuals

 Low Concentration

 Mean Concentration

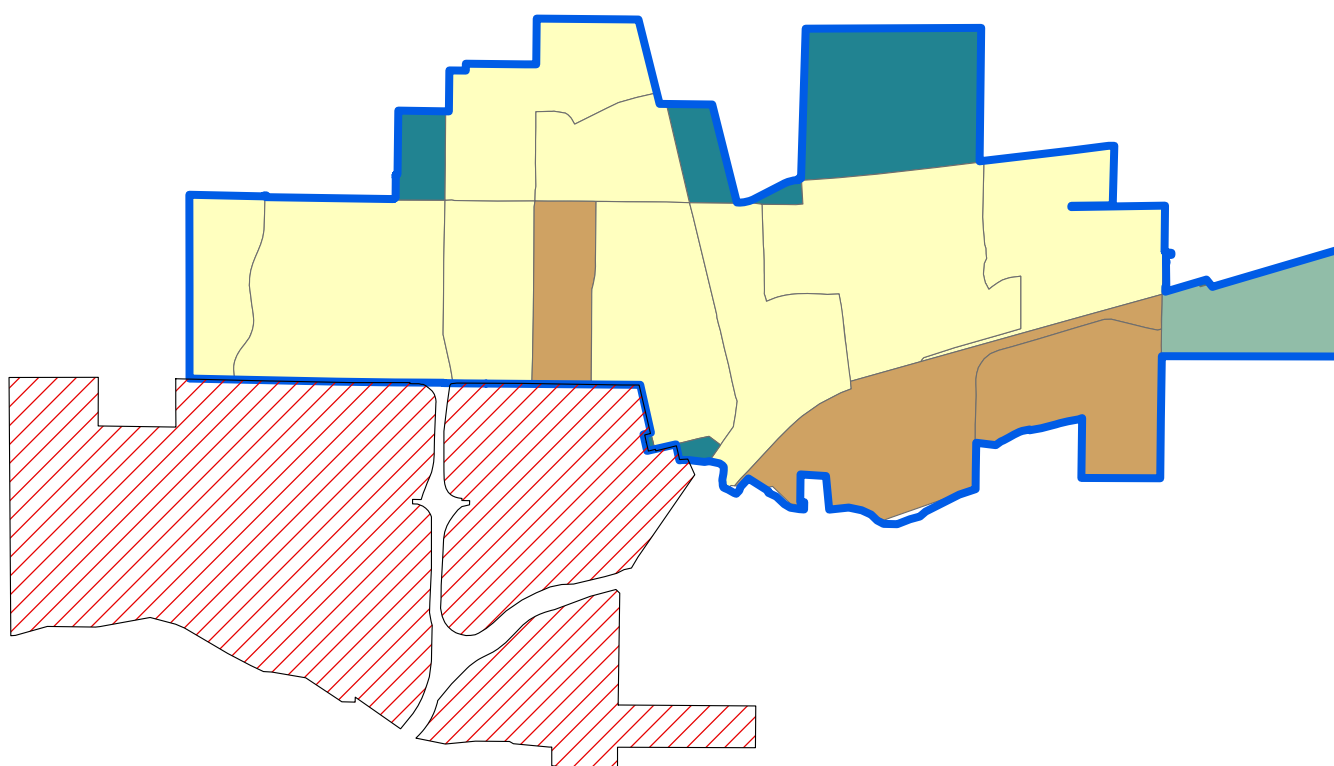
 High Concentration

 Higher Concentration

 Miles
0 0.35 0.7 1.4 2.1 2.8



1990 Percent Hispanic by Census Tract



Legend



UC Davis



Davis City Limit

Hispanic Individuals



Low Concentration



Mean Concentration



High Concentration

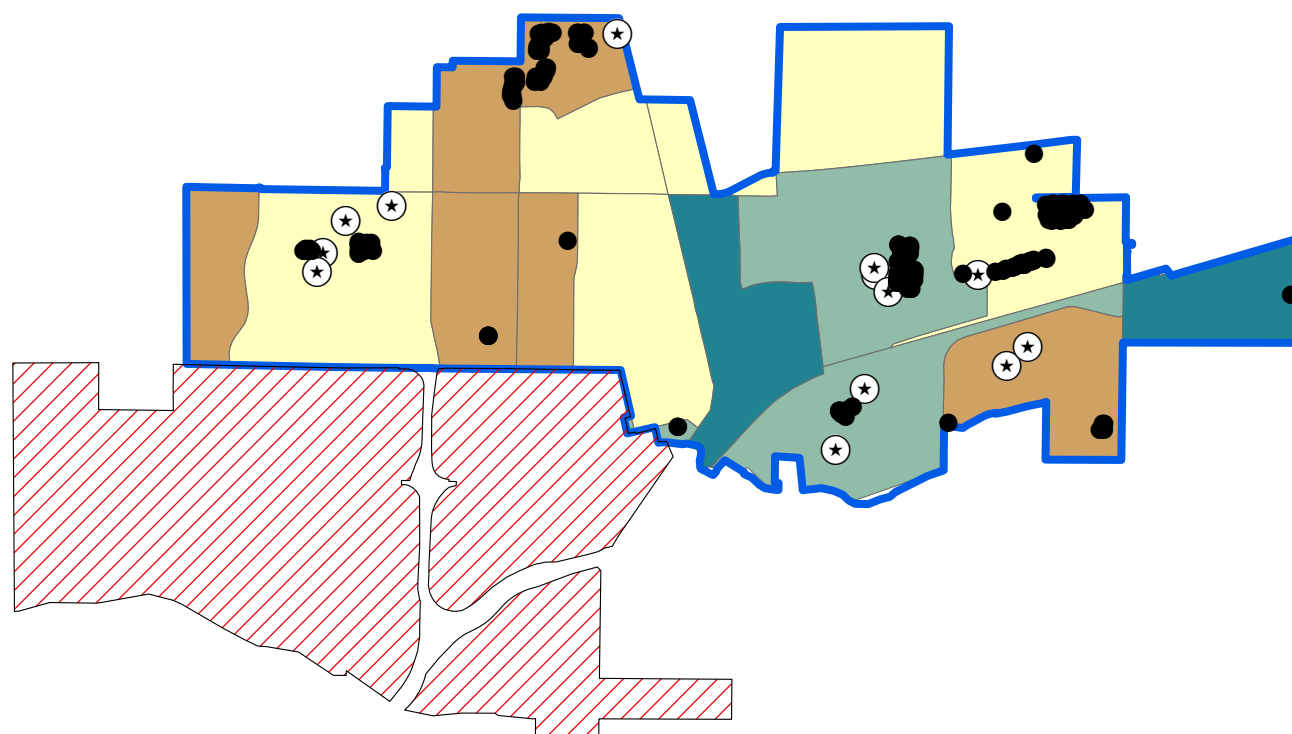


Higher Concentration

0 0.35 0.7 1.4 2.1 2.8 Miles



2000 Percent Hispanic by Census Tract



Legend

- SF Inclusionary Affordable Housing
- ⊛ MF Inclusionary Affordable Housing

 UC Davis


 Davis City Limit

Hispanic Individuals

 Low Concentration

 Mean Concentration

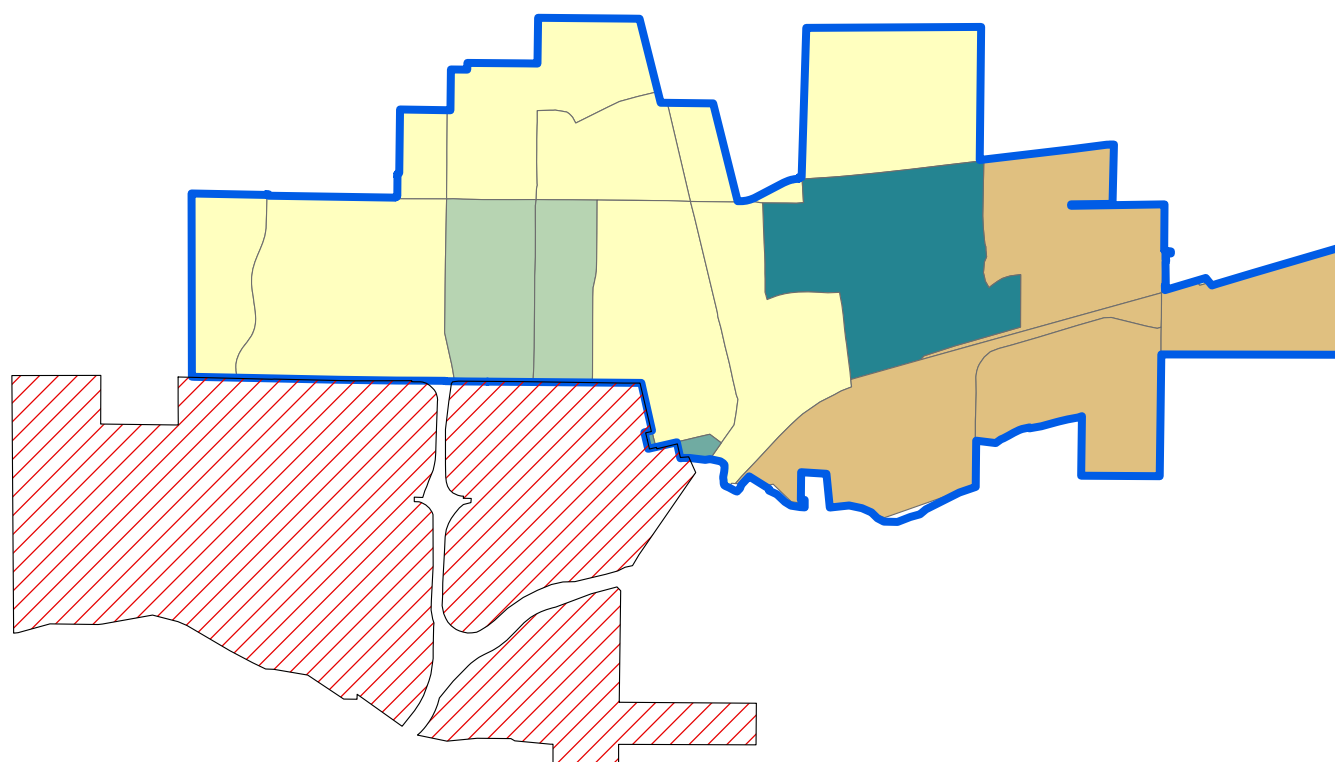
 High Concentration

 Higher Concentration

0 0.375 0.75 1.5 2.25 3 Miles



1980 Percent Asian by Census Tract



Legend



UC Davis



Davis City Limit

Asian Individuals



Low Concentration



Mean Concentration



High Concentration



Higher Concentration

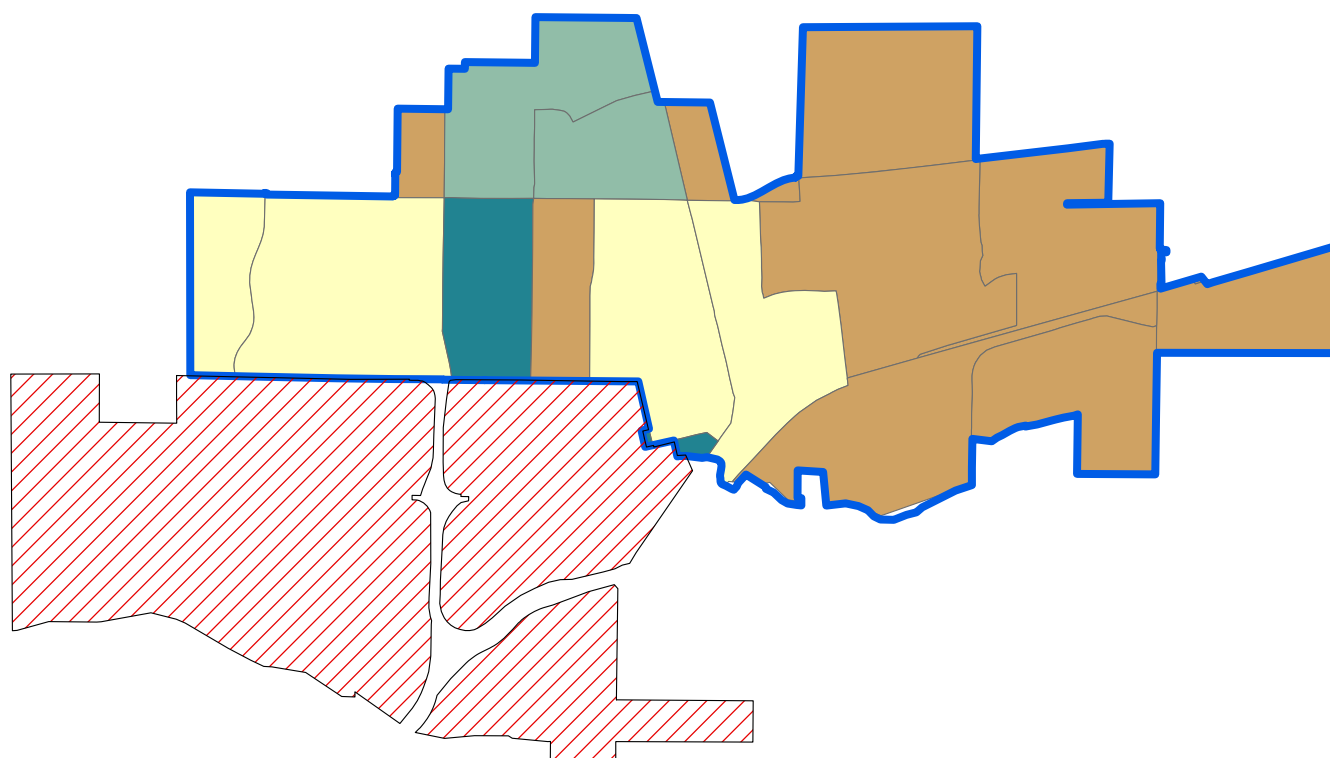


Highest Concentration

0 0.35 0.7 1.4 2.1 2.8 Miles



1990 Percent Asian by Census Tract



Legend



UC Davis



Davis City Limit

Asian Individuals



Low Concentration



Mean Concentration



High Concentration

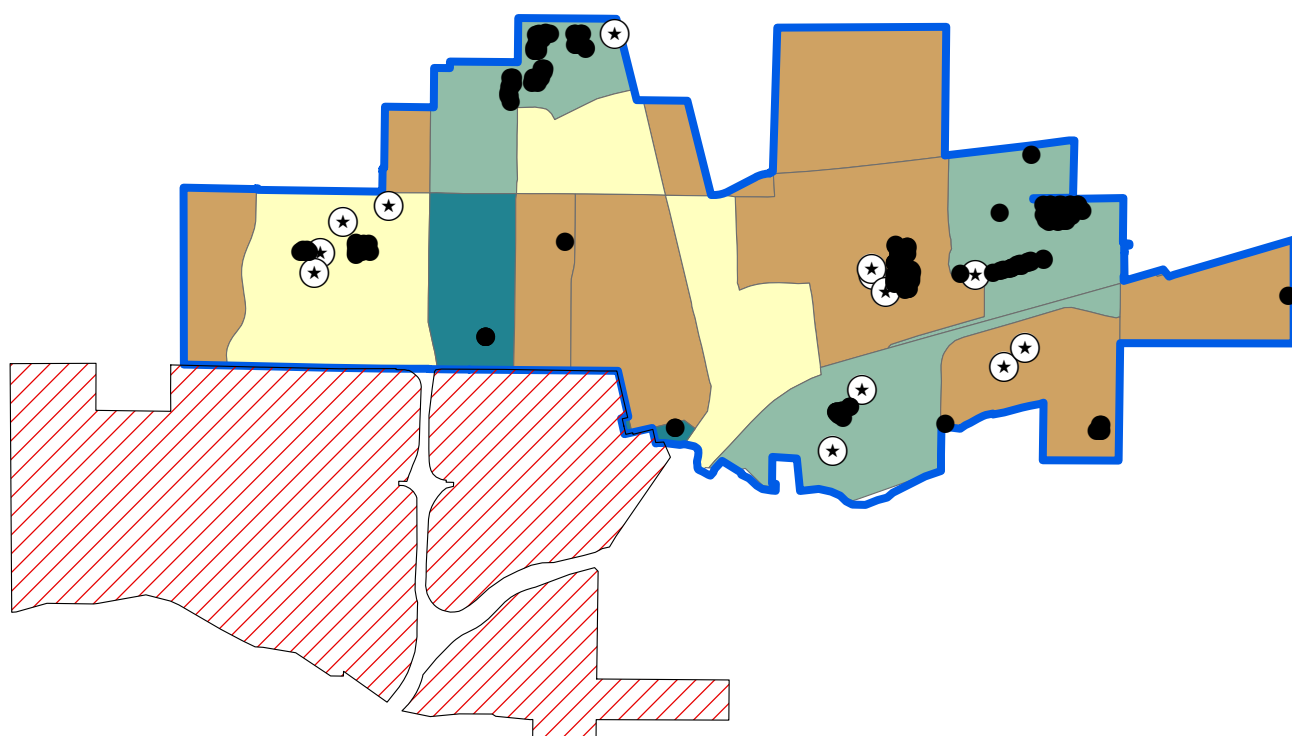


Higher Concentration

0 0.35 0.7 1.4 2.1 2.8 Miles




2000 Percent Asian by Census Tract



Legend





- SF Inclusionary Affordable Housing
- ★ MF Inclusionary Affordable Housing

 UC Davis

 Davis City Limit

Asian Individuals

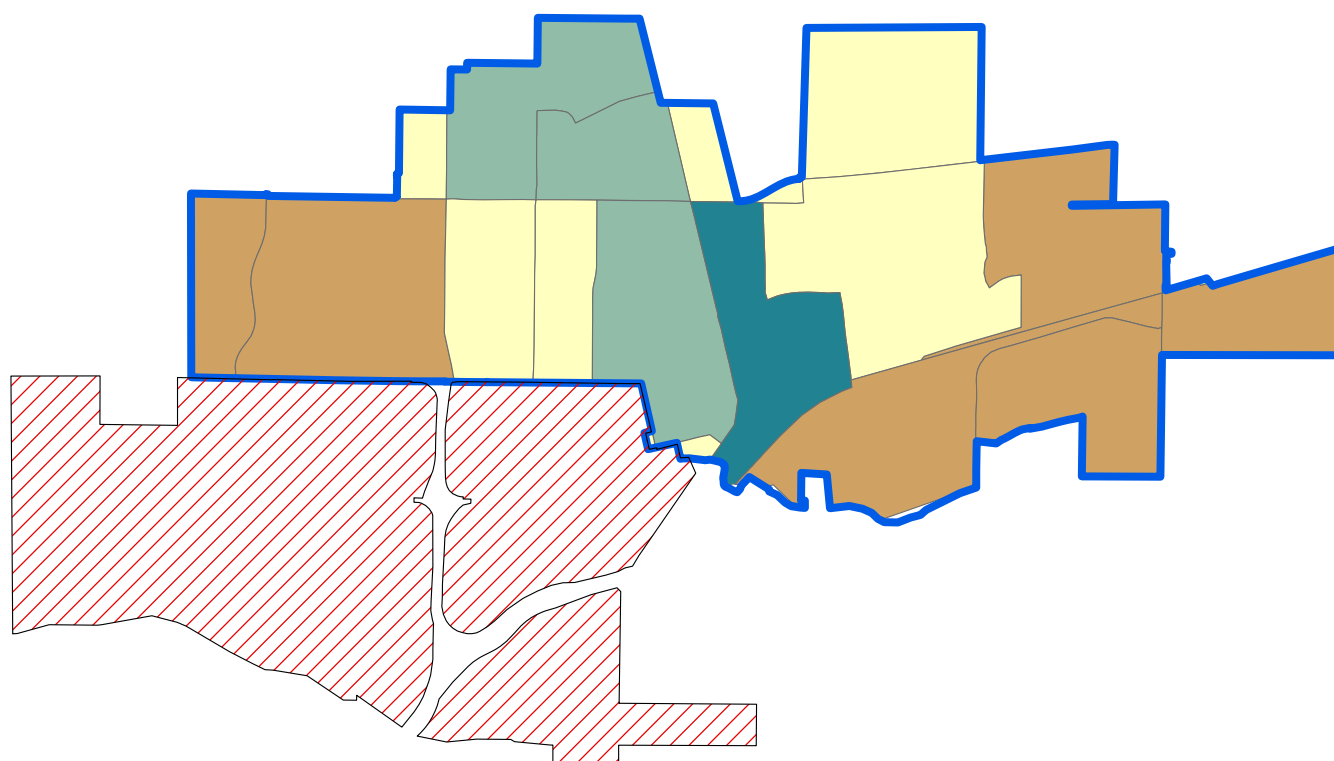
2000A2

-  Low Concentration
-  Mean Concentration
-  High Concentration
-  Higher Concentration

0 0.375 0.75 1.5 2.25 3 Miles



1980 Percent Native American by Census Tract



Legend



UC Davis



Davis City Limit

Native American Individuals



Low Concentration



Mean Concentration



High Concentration

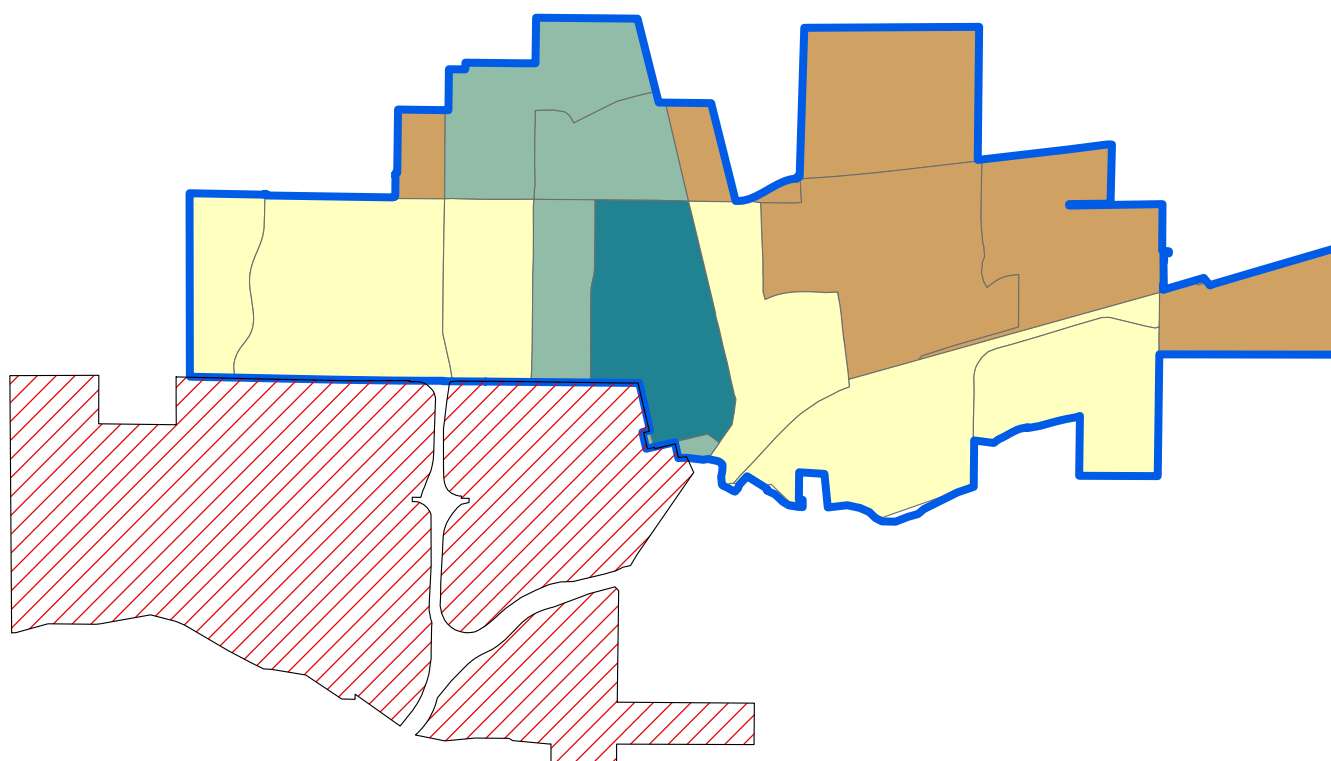


Higher Concentration

0 0.35 0.7 1.4 2.1 2.8 Miles




1990 Percent Native American by Census Tract



Legend

 UC Davis


 Davis City Limit


Native American Individuals

 Low Concentration

 Mean Concentration

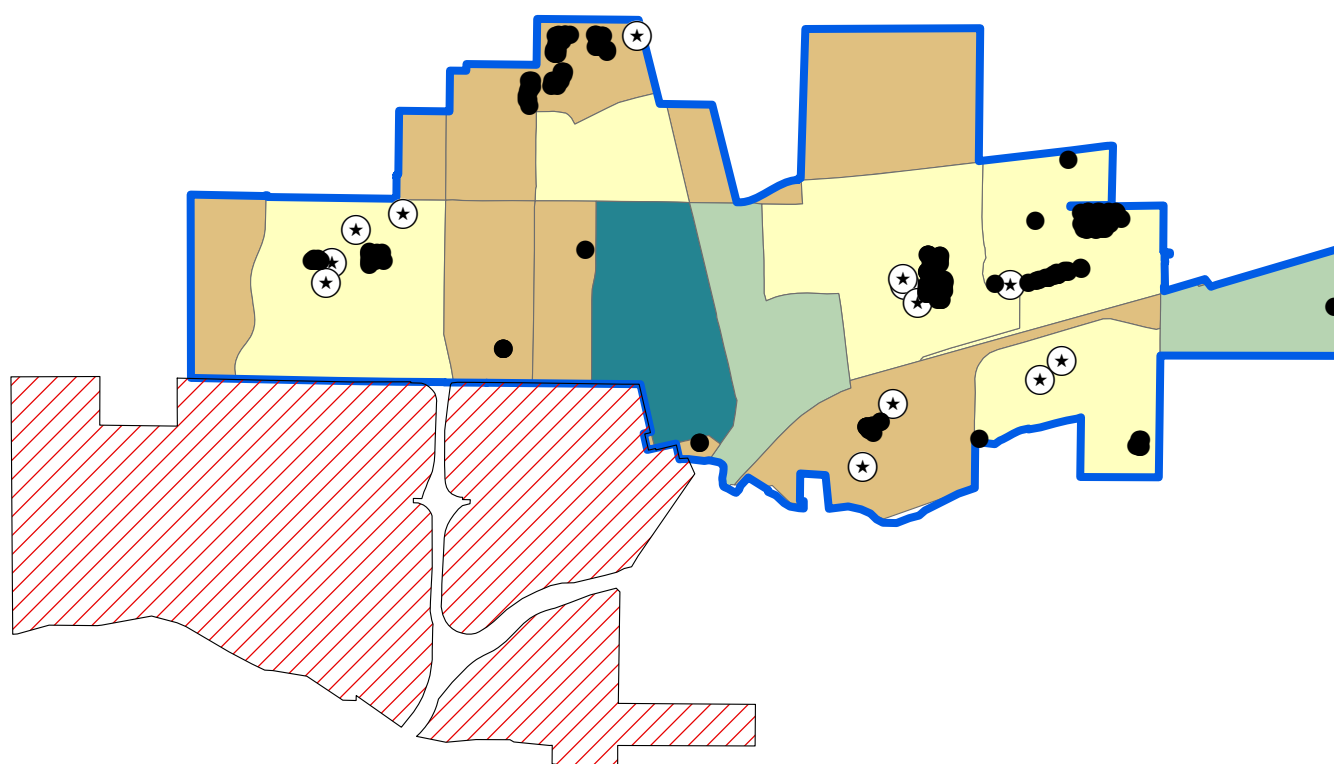
 High Concentration

 Higher Concentration

 Miles
0 0.35 0.7 1.4 2.1 2.8



2000 Percent Native American by Census Tract



Legend

- SF Inclusionary Affordable Housing
- ⊛ MF Inclusionary Affordable Housing



UC Davis



Davis City Limit

Native American Individuals



Low Concentration



Mean Concentration



High Concentration



Higher Concentration

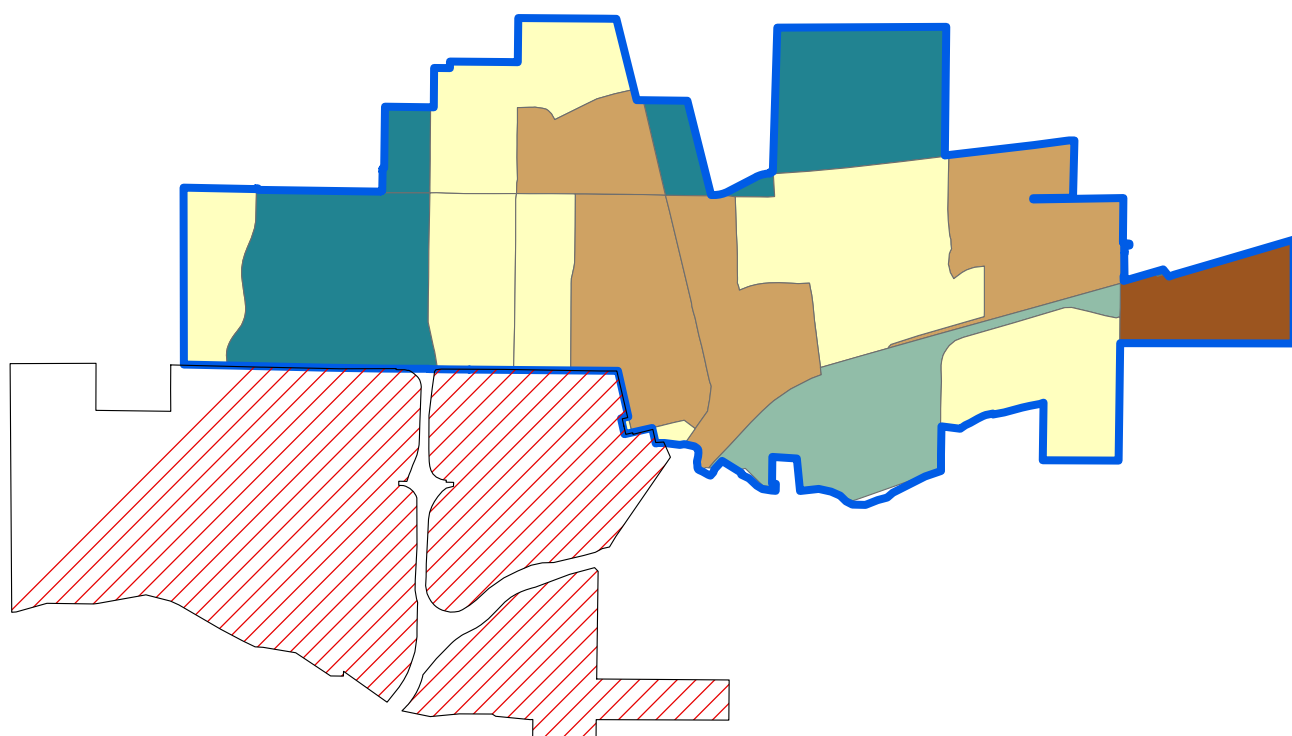


Highest Concentration

0 0.35 0.7 1.4 2.1 2.8 Miles








1980 Percent Moderate Income by Census Tract



Legend Davis

 Davis City Limit

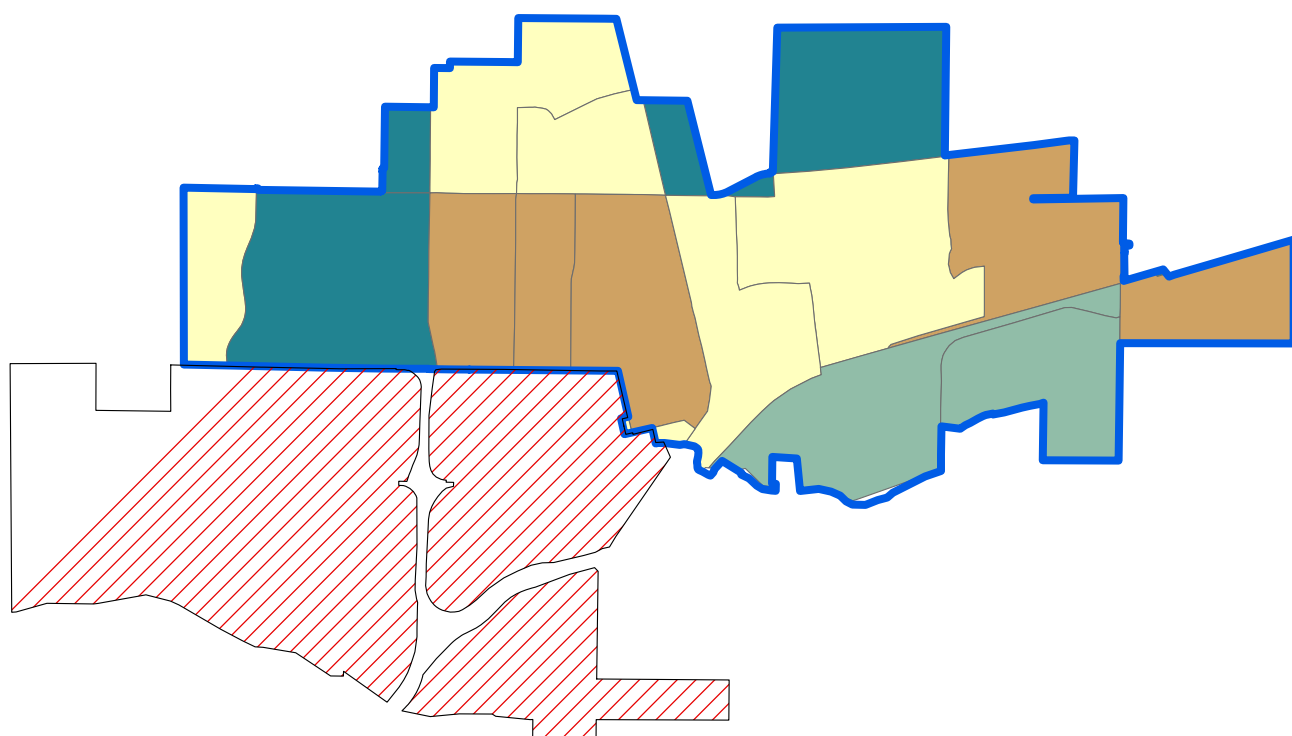
Moderate Income Households

-  Lower Concentration
-  Low Concentration
-  Mean Concentration
-  High Concentration
-  Highest Concentration

0 0.375 0.75 1.5 2.25 3 Miles




1990 Percent Moderate Income by Census Tract



Legend

 UC Davis


 Davis City Limit

Moderate Income Households

 Low Concentration

 Mean Concentration

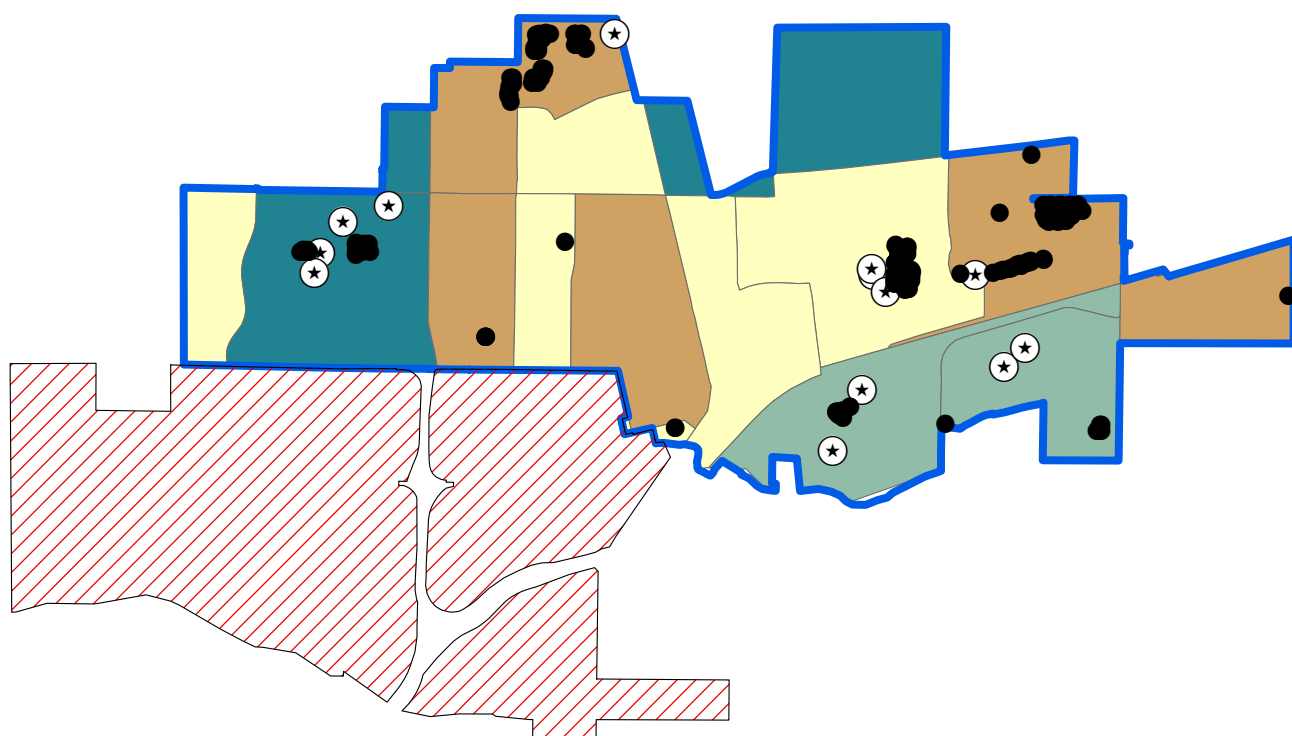
 High Concentration

 Higher Concentration

0 0.375 0.75 1.5 2.25 3 Miles



2000 Percent Moderate Income by Census Tract




Legend





SF Inclusionary Affordable Housing

- SF Inclusionary Affordable Housing
- ⊙ MF Inclusionary Affordable Housing

 UC Davis

 Davis City Limit

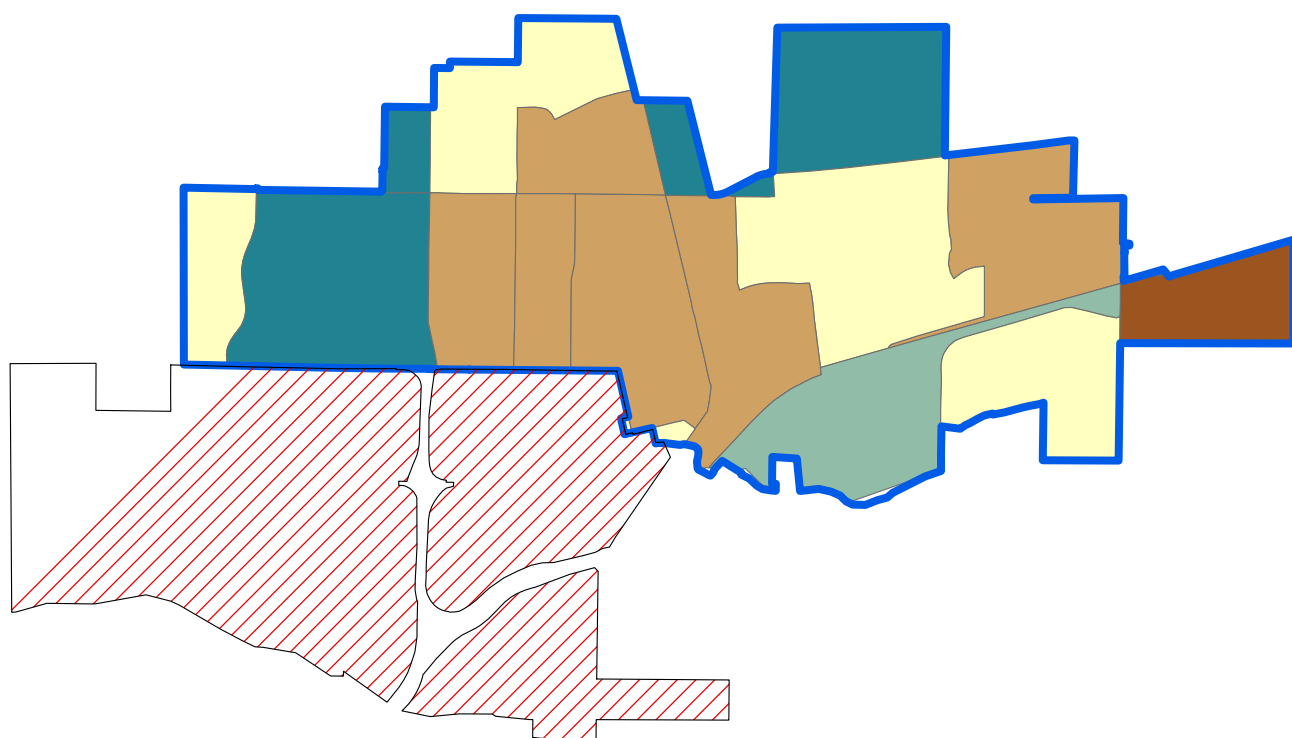
Moderate Income Households

-  Low Concentration
-  Mean Concentration
-  High Concentration
-  Higher Concentration

0 0.375 0.75 1.5 2.25 3 Miles



1980 Percent Low Income by Census Tract



Legend



UC Davis



Davis City Limit

Low Income Households



Lower Concentration



Low Concentration



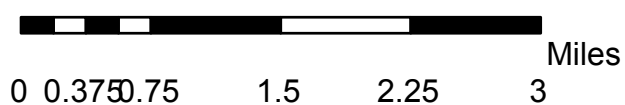
Mean Concentration



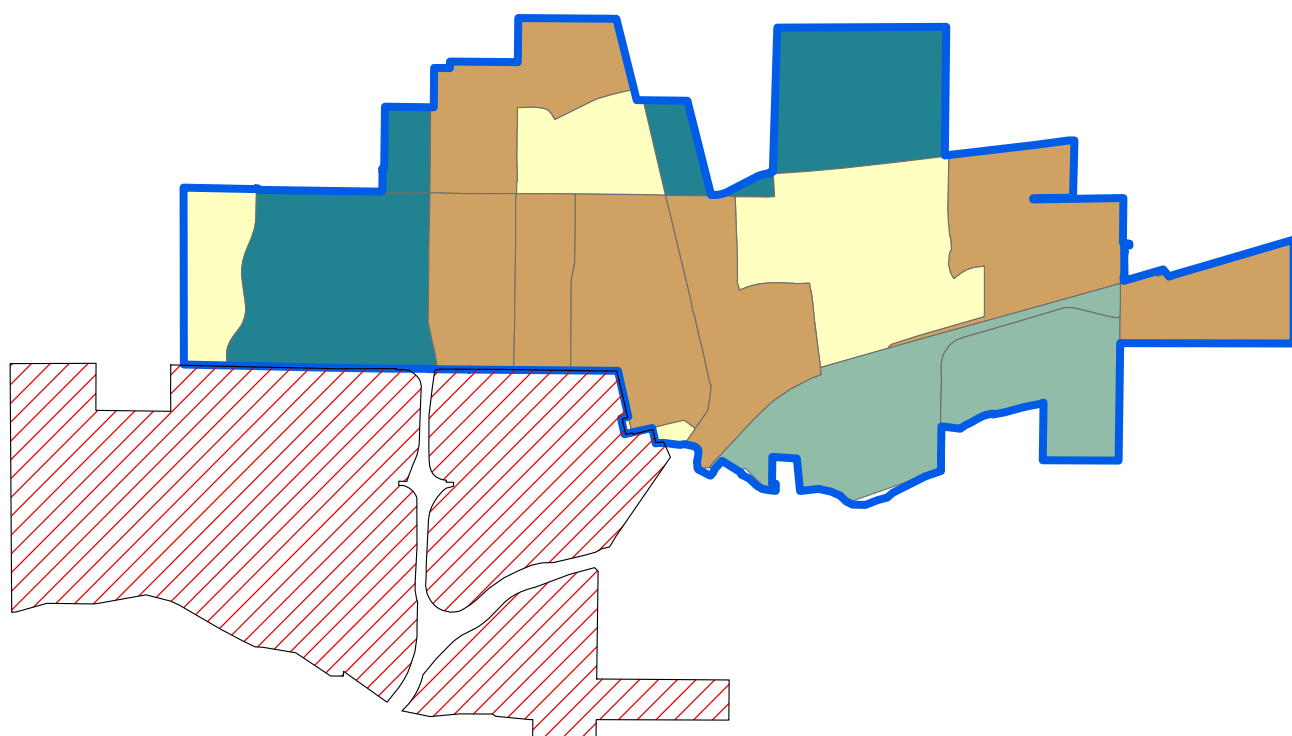
High Concentration



Highest Concentration



1990 Percent Low Income by Census Tract



Legend



UC Davis



Davis City Limit

Low Income Households

1990LOW



Low Concentration



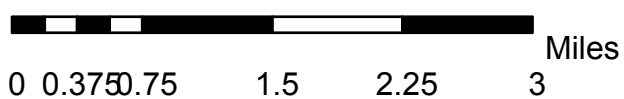
Mean Concentration



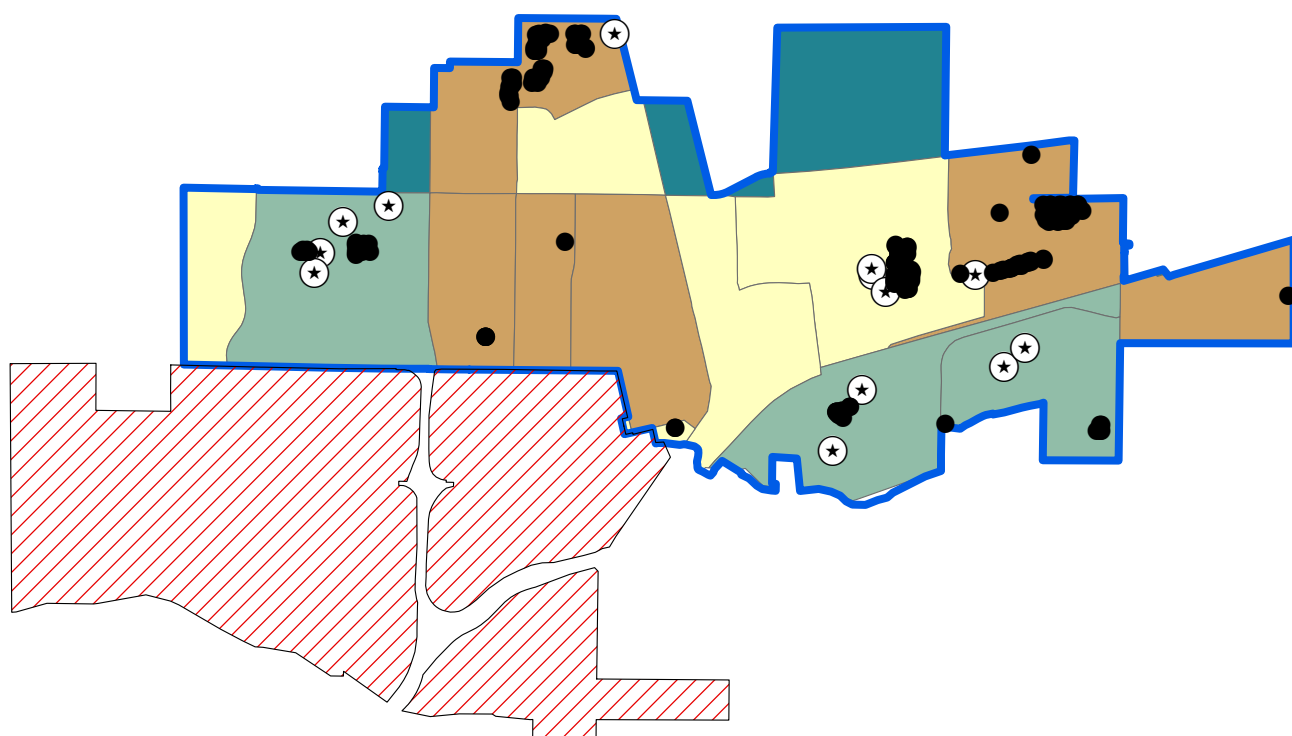
High Concentration



Higher Concentration



2000 Percent Low Income by Census Tract



Legend





SF Inclusionary Affordable Housing

- SF Inclusionary Affordable Housing
- ⊛ MF Inclusionary Affordable Housing

 UC Davis

 Davis City Limit

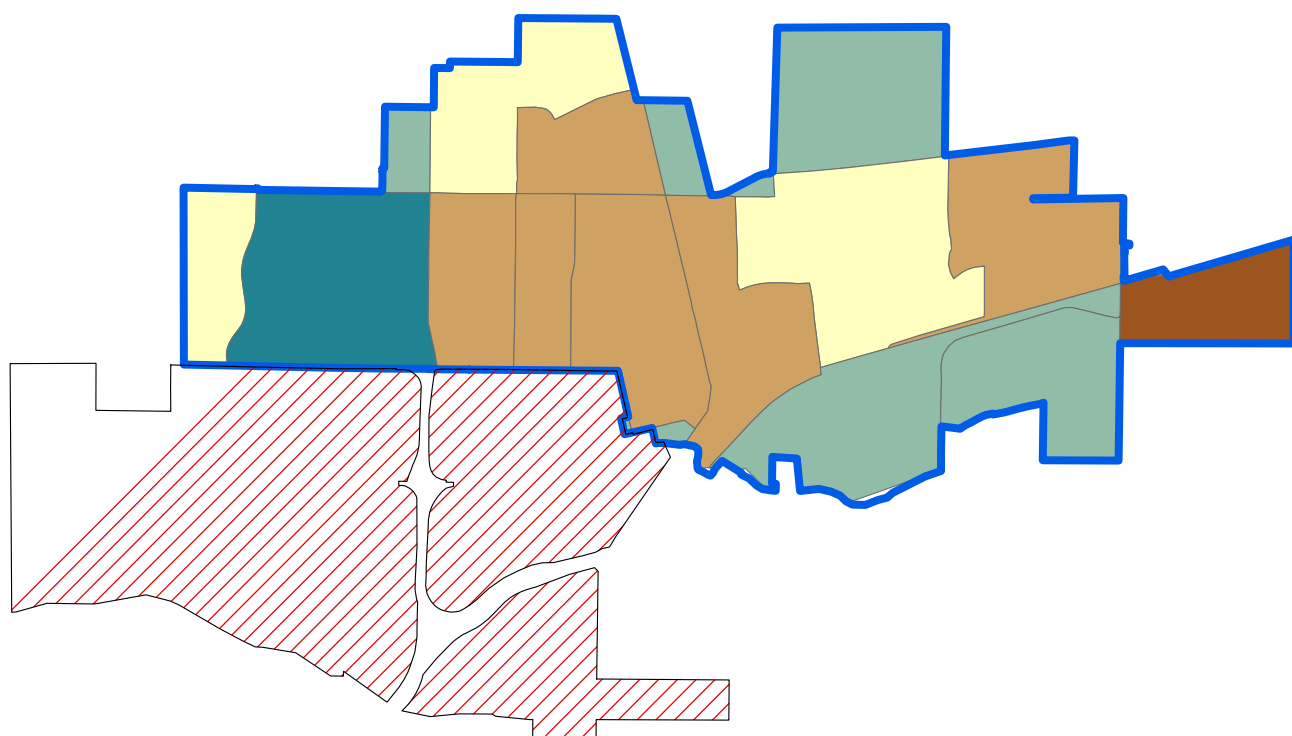
Low Income Households

-  Low Concentration
-  Mean Concentration
-  High Concentration
-  Higher Concentration



0 0.375 0.75 1.5 2.25 3 Miles








1980 Percent Very Low Income by Census Tract

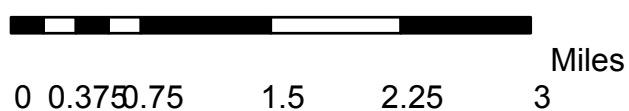


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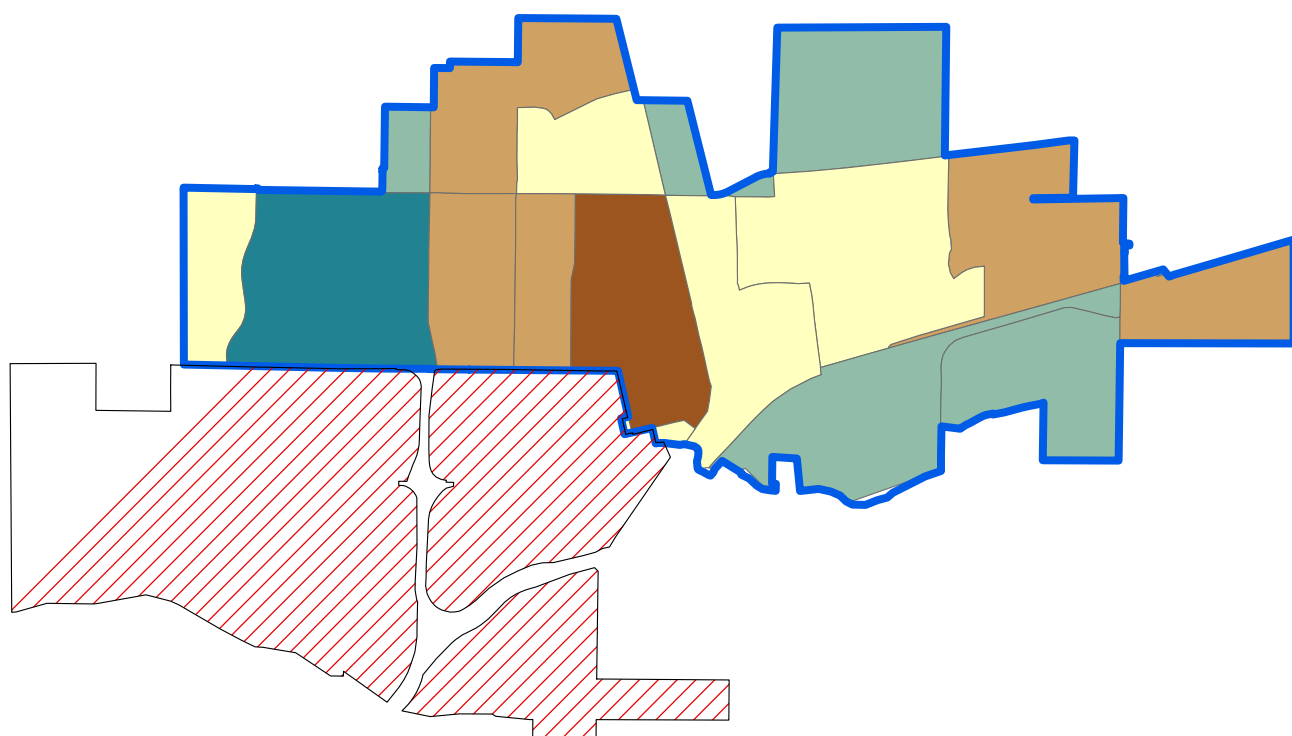
-  UC Davis
-  Davis City Limit

Very Low Income Households

-  Lower Concentration
-  Low Concentration
-  Mean Concentration
-  High Concentration
-  Higher Concentration




1990 Percent Very Low Income by Census Tract



Legend

 UC Davis

 Davis City Limit


Very Low Income Households

 Lower Concentration

 Low Concentration

 Mean Concentration

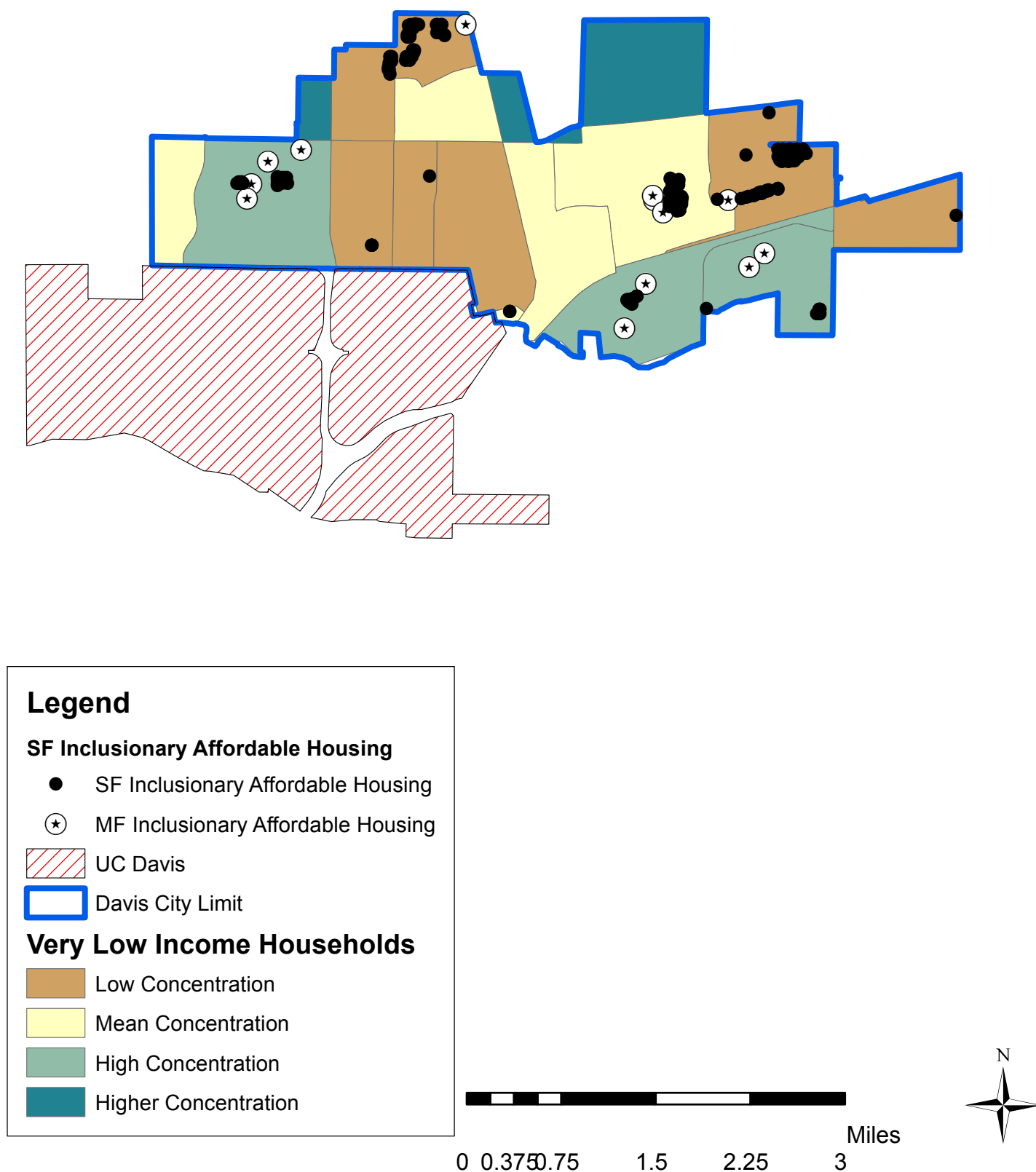
 High Concentration

 Higher Concentration

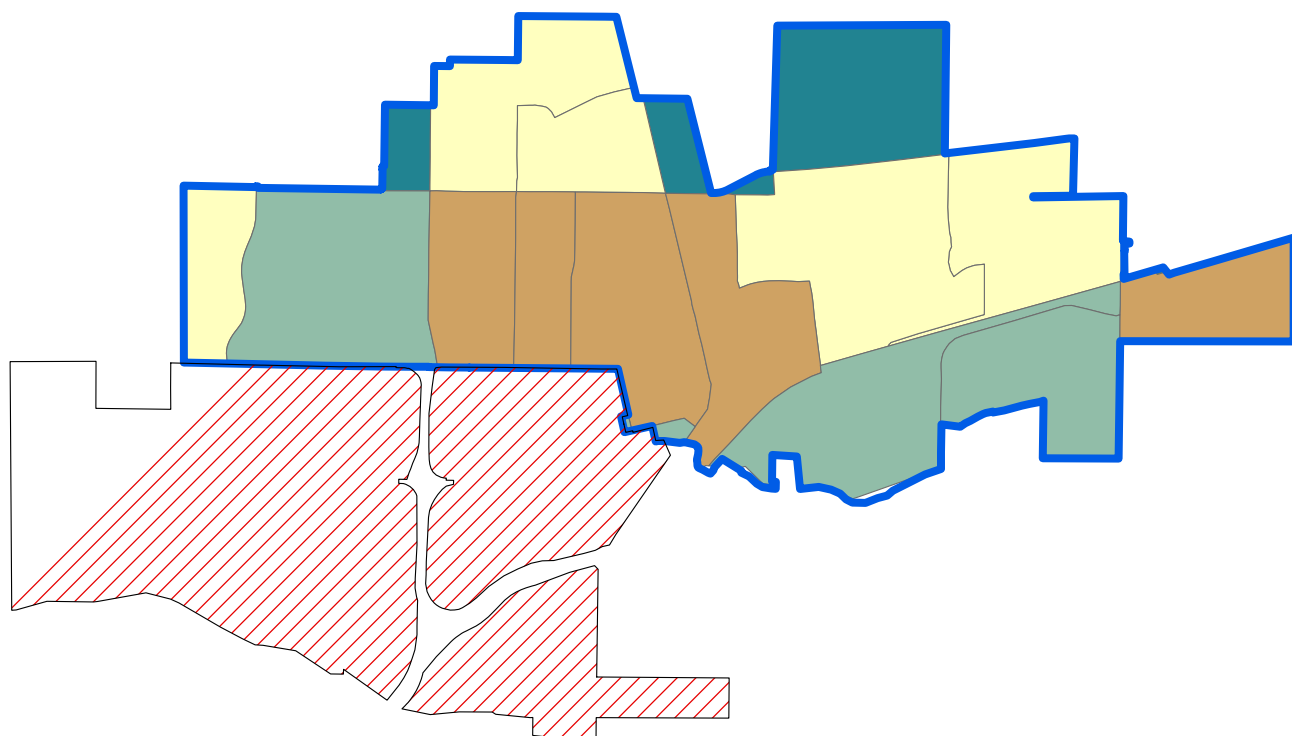
0 0.375 0.75 1.5 2.25 3 Miles



2000 Percent Very Low Income by Census Tract




1980 Percent Extremely Low Income by Census Tract




Legend

 UC Davis


 Davis City Limit

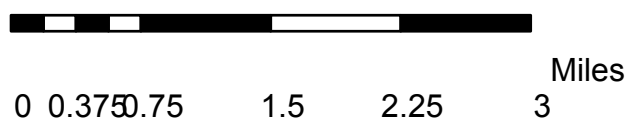
Extremely Low Income Households

 Low Concentration

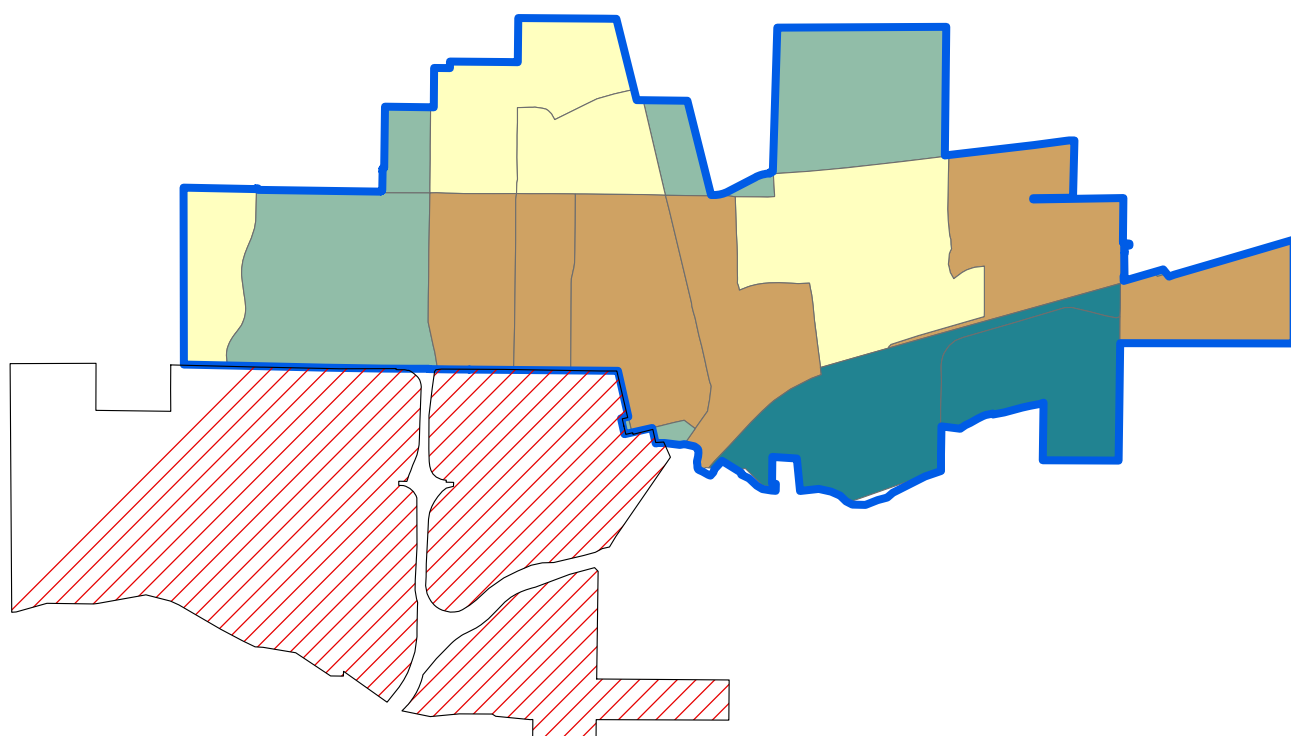
 Mean Concentration

 High Concentration

 Higher Concentration




1990 Percent Extremely Low Income by Census Tract




Legend

 UC Davis


 Davis City Limit

Extremely Low Income Households

 Low Concentration

 Mean Concentration

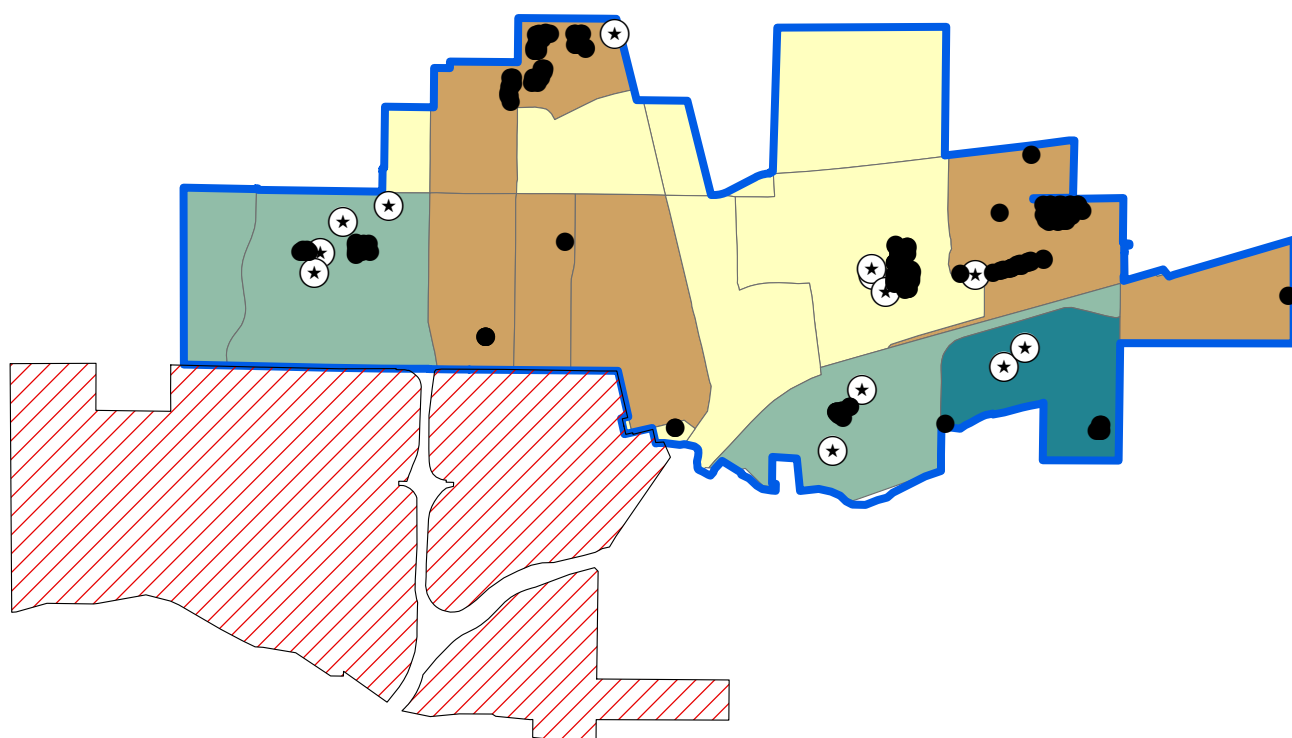
 High Concentration

 Higher Concentration


0 0.375 0.75 1.5 2.25 3 Miles



2000 Percent Extremely Low Income by Census Tract




Legend





SF Inclusionary Affordable Housing


- SF Inclusionary Affordable Housing
- ⊛ MF Inclusionary Affordable Housing

 UC Davis

 Davis City Limit

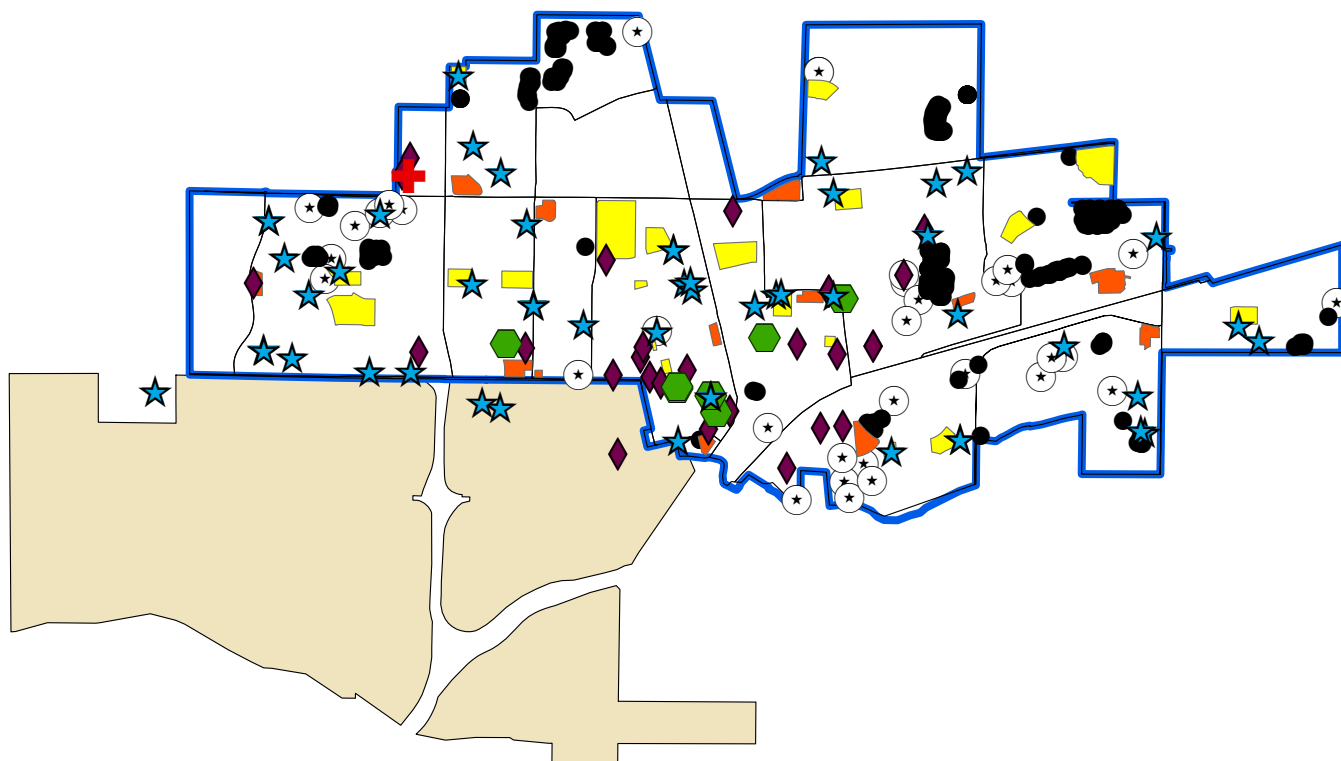
Extremely Low Income Households

-  Low Concentration
-  Mean Concentration
-  High Concentration
-  Higher Concentration

 Miles
0 0.375 0.75 1.5 2.25 3



Social Services in Davis



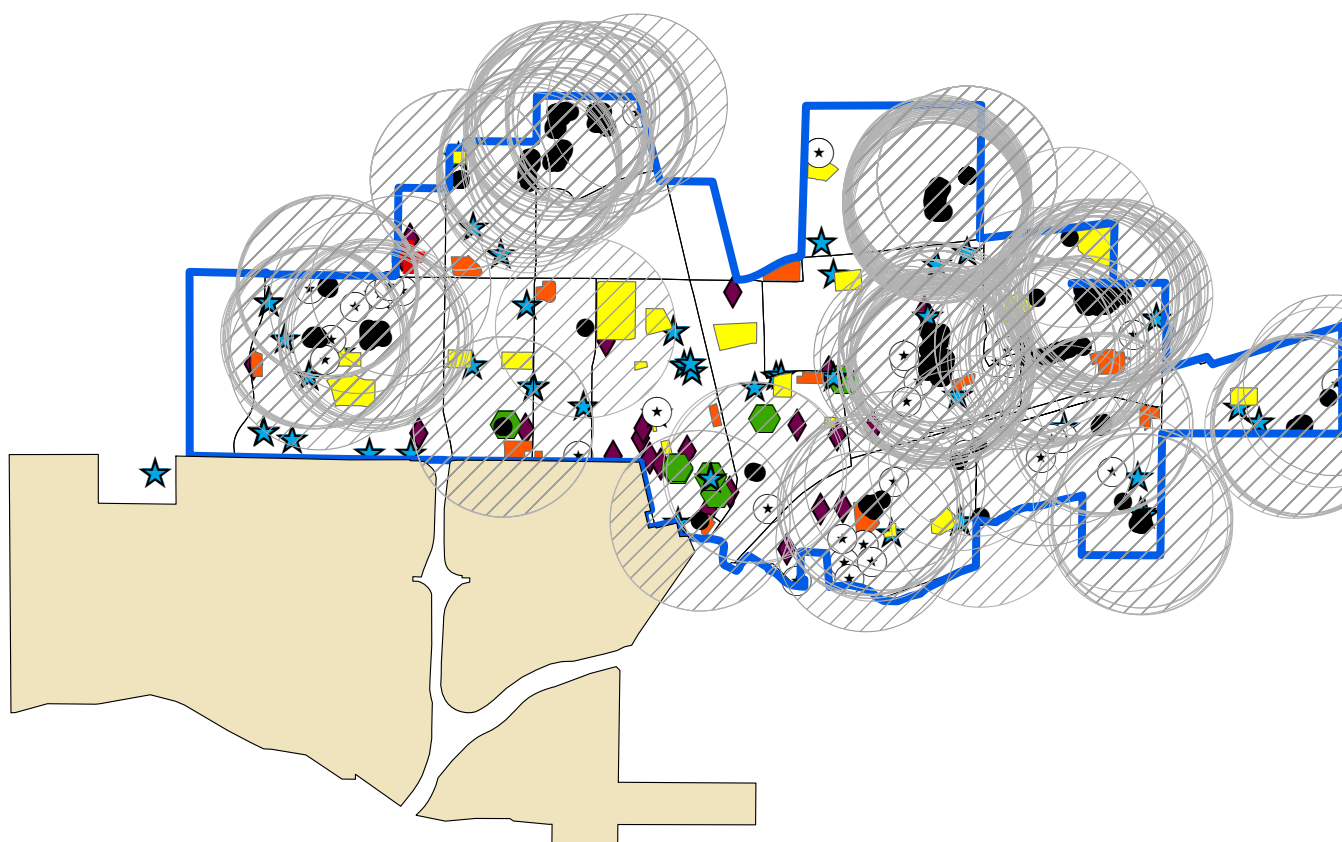
Legend

- ★ Child Care Services
- ⬡ Food Distribution Services
- ✚ Hospital
- ◆ Other Services
- Shopping Centers
- Schools
- SF Inclusionary Affordable Housing
- ⊙ MF Inclusionary Affordable Housing
- CensusTracts
- ▭ City Limits
- UC Davis






0 0.35 0.7 1.4 2.1 2.8 Miles



Social Services in Davis



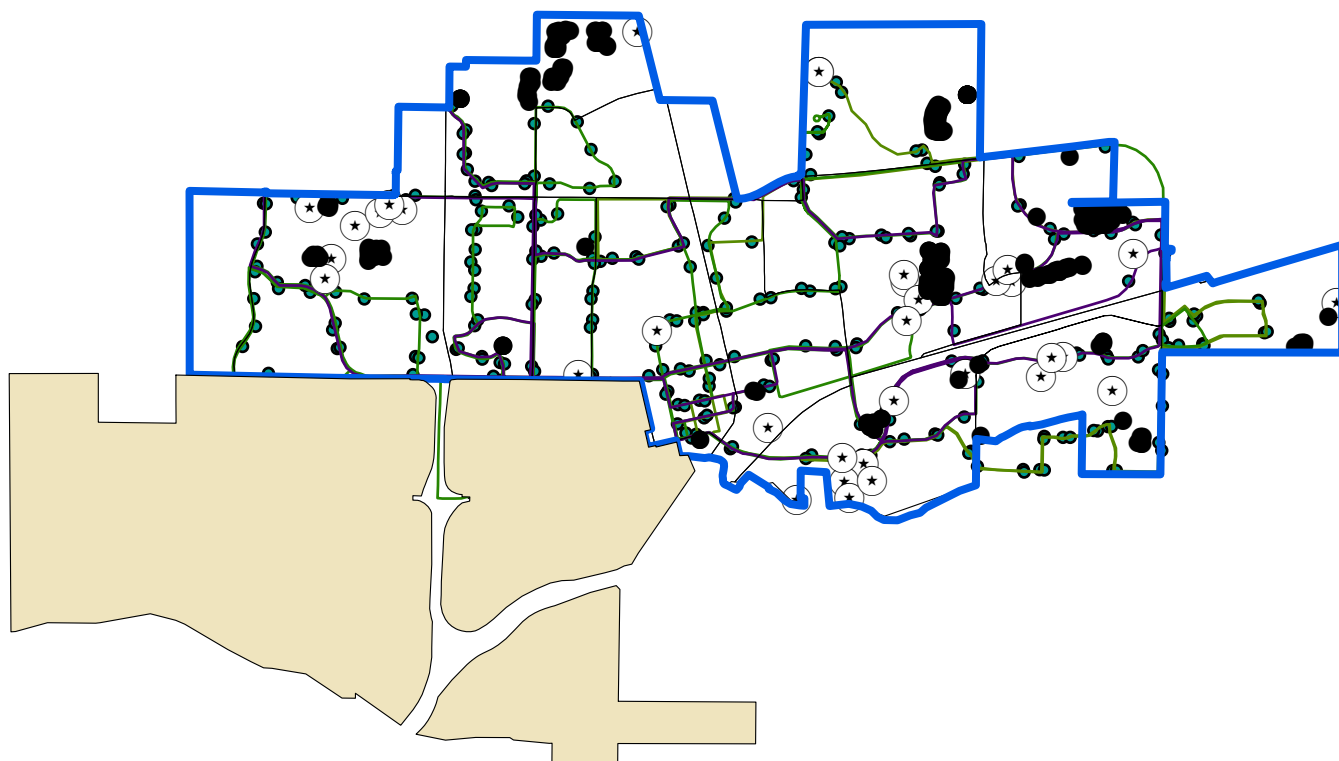
Legend

-  UC Davis
-  City Limits
-  CensusTracts
-  SF Inclusionary Affordable Housing
-  MF Inclusionary Affordable Housing
-  Shopping Centers
-  Schools
-  Child Care Services
-  Food Distribution Services
-  Hospital
-  Other Services








0 0.35 0.7 1.4 2.1 2.8 Miles



Social Services in Davis



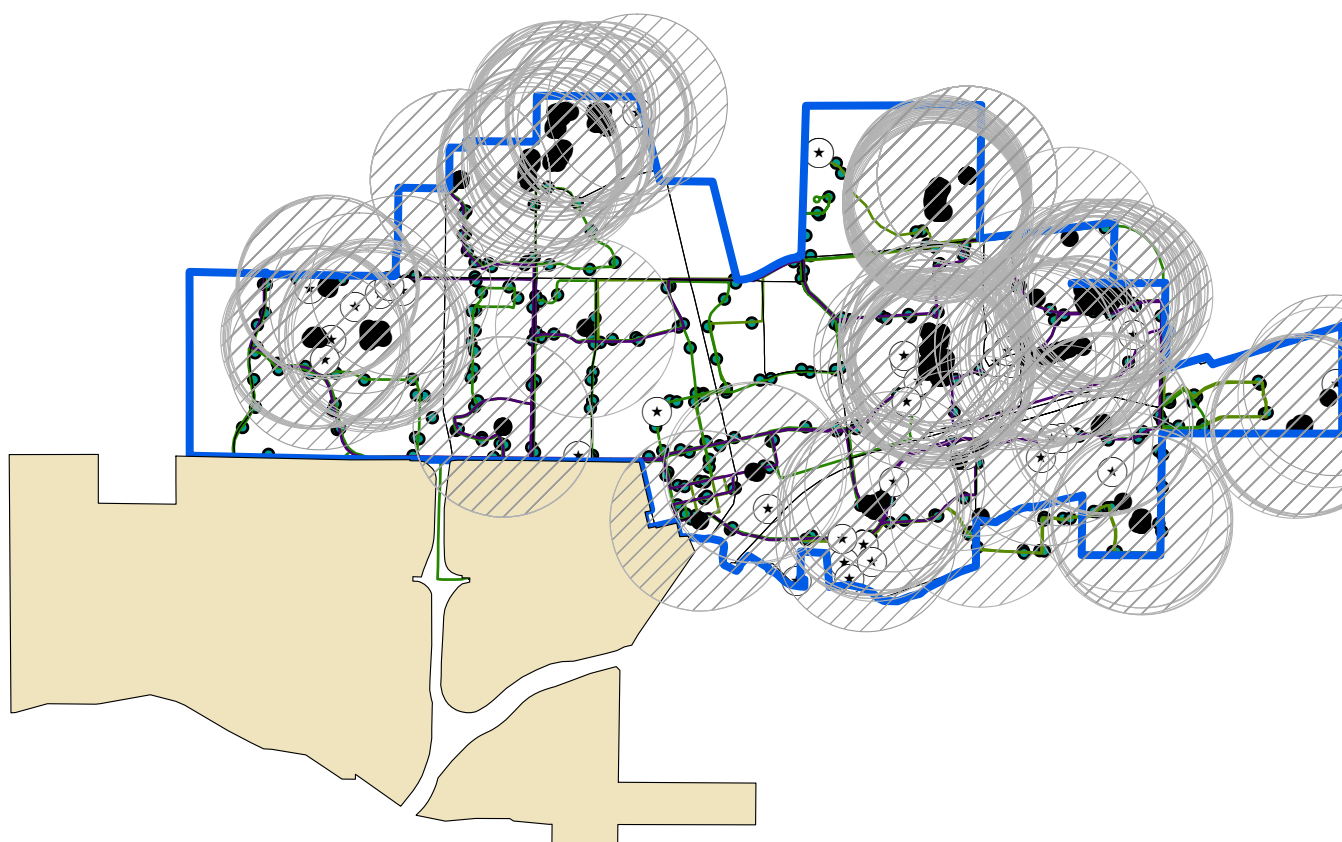
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-  UC Davis
-  City Limits
-  CensusTracts
-  SF Inclusionary Affordable Housing
-  MF Inclusionary Affordable Housing
-  Saturday Routes
-  Unitrans Routes






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Social Services in Davis



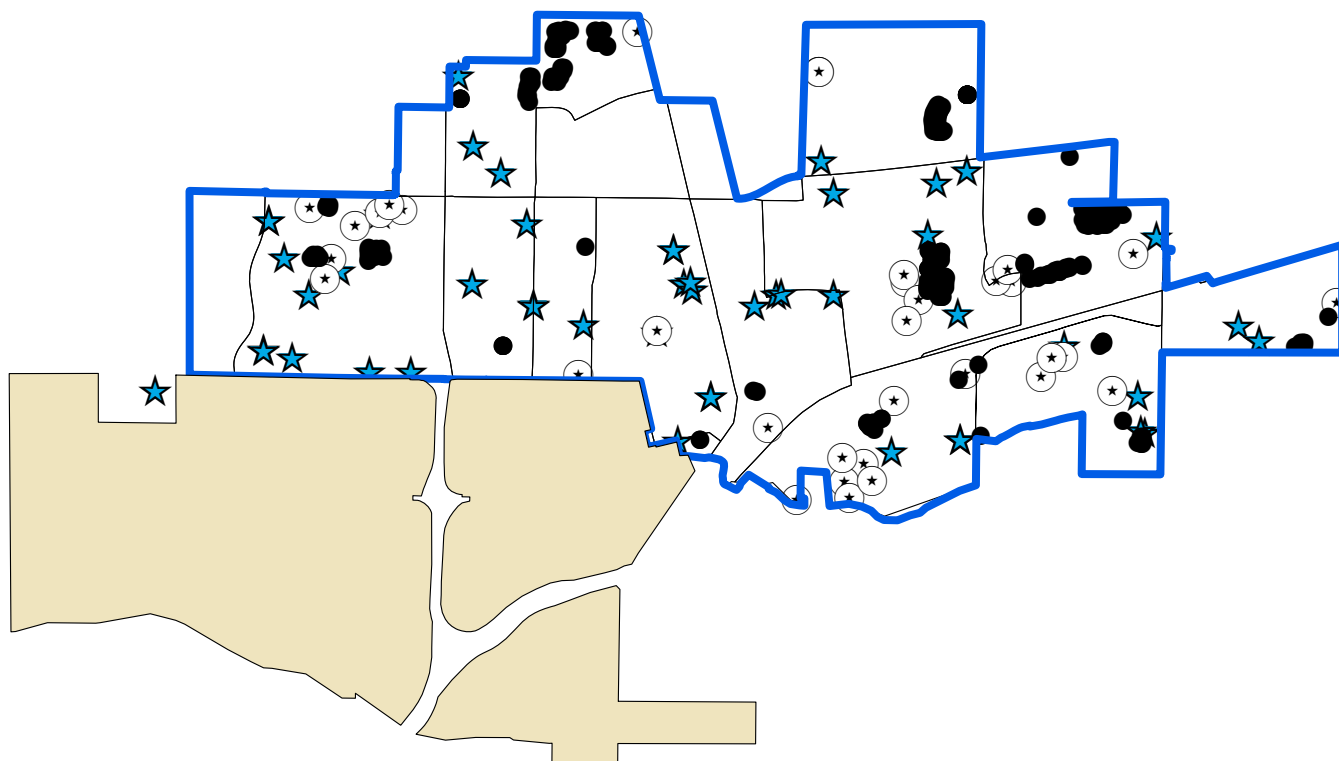
Legend

-  UC Davis
-  City Limits
-  CensusTracts
-  SF Inclusionary Affordable Housing
-  MF Inclusionary Affordable Housing

0 0.35 0.7 1.4 2.1 2.8 Miles



Social Services in Davis



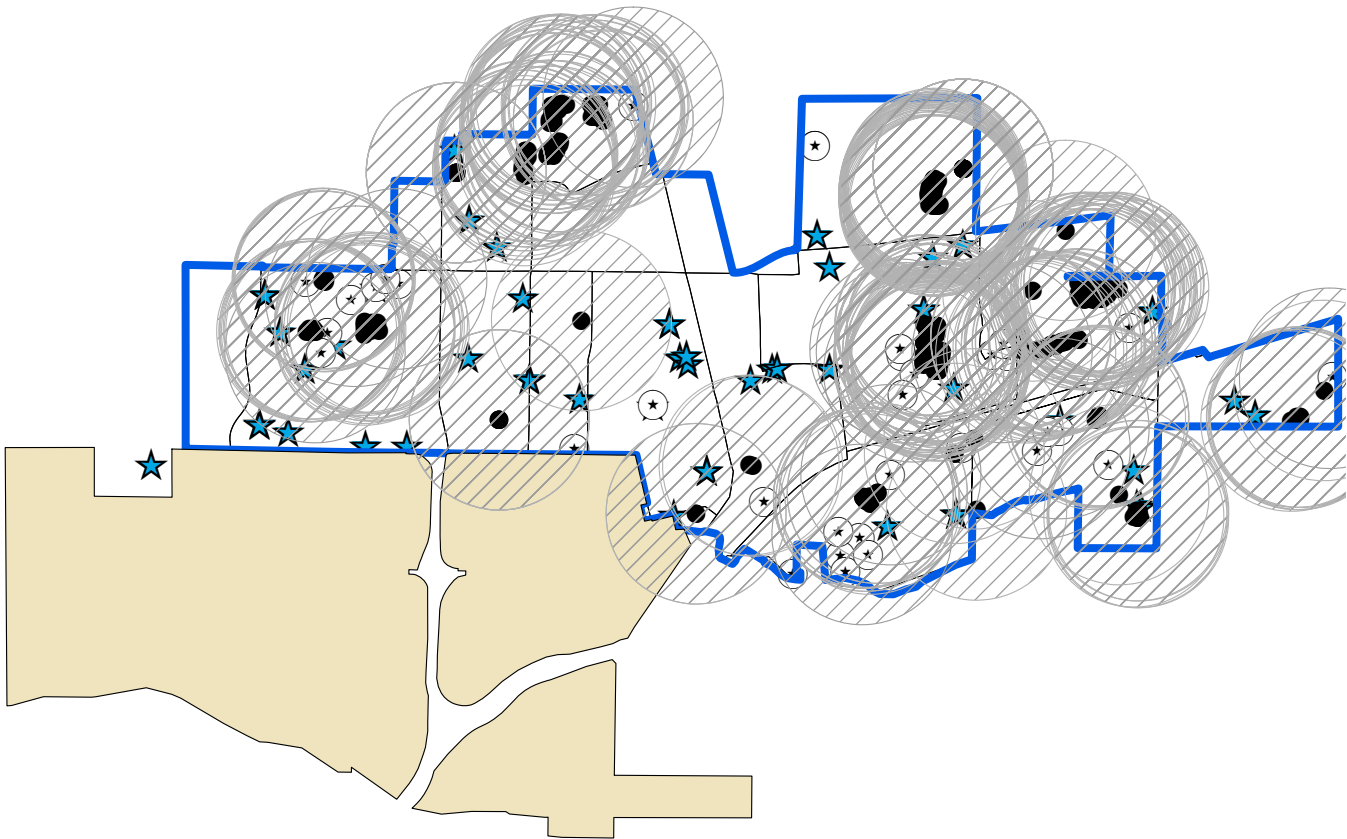
Legend

-  UC Davis
-  City Limits
-  CensusTracts
-  SF Inclusionary Affordable Housing
-  MF Inclusionary Affordable Housing
-  Child Care Services

0 0.35 0.7 1.4 2.1 2.8 Miles



Social Services in Davis



Legend

UC Davis

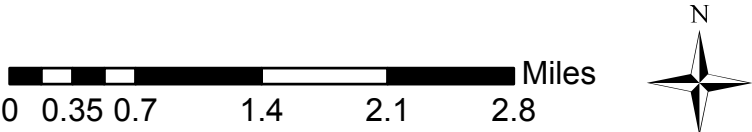
City Limits

CensusTracts

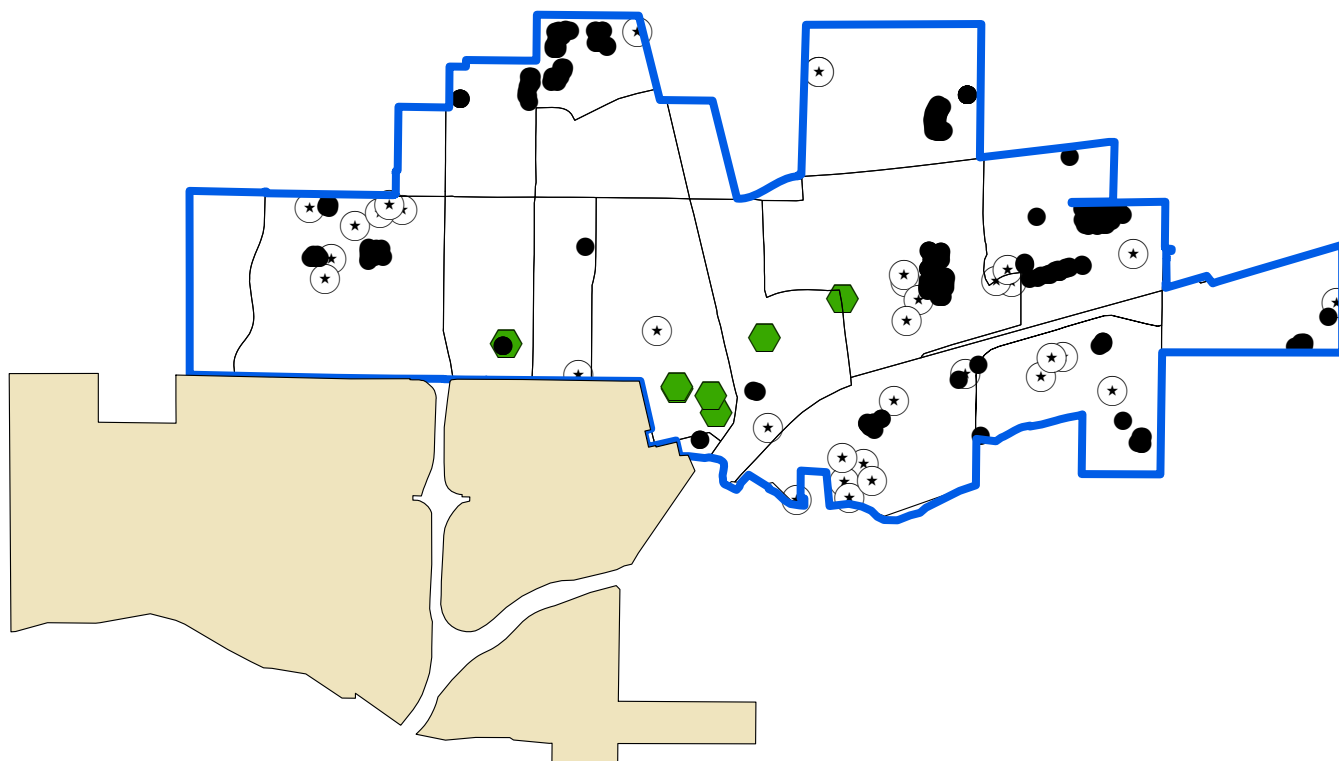
SF Inclusionary Affordable Housing

MF Inclusionary Affordable Housing

Child Care Services



Social Services in Davis



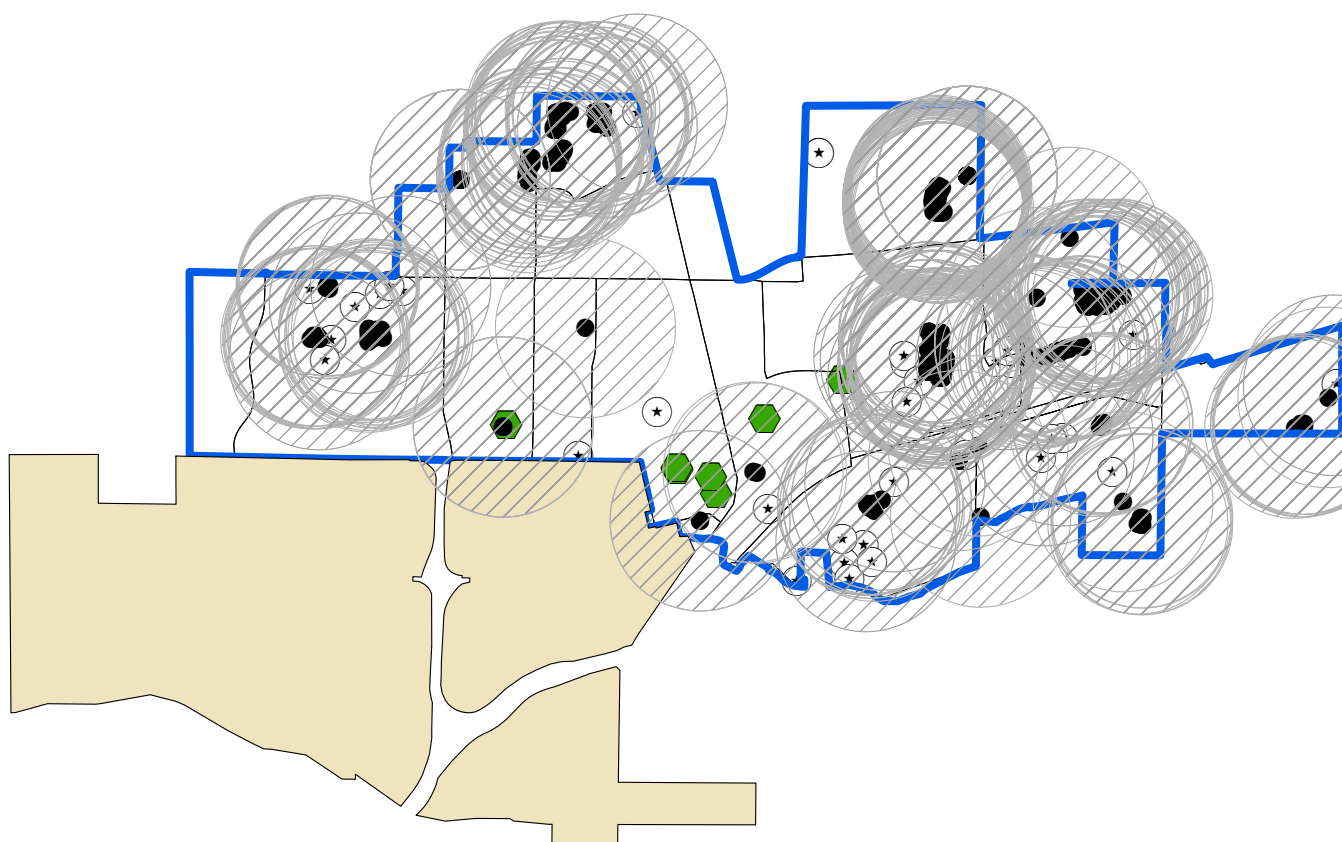
Legend

-  UC Davis
-  City Limits
-  CensusTracts
-  SF Inclusionary Affordable Housing
-  MF Inclusionary Affordable Housing
-  Food Distribution Services

0 0.35 0.7 1.4 2.1 2.8 Miles



Social Services in Davis



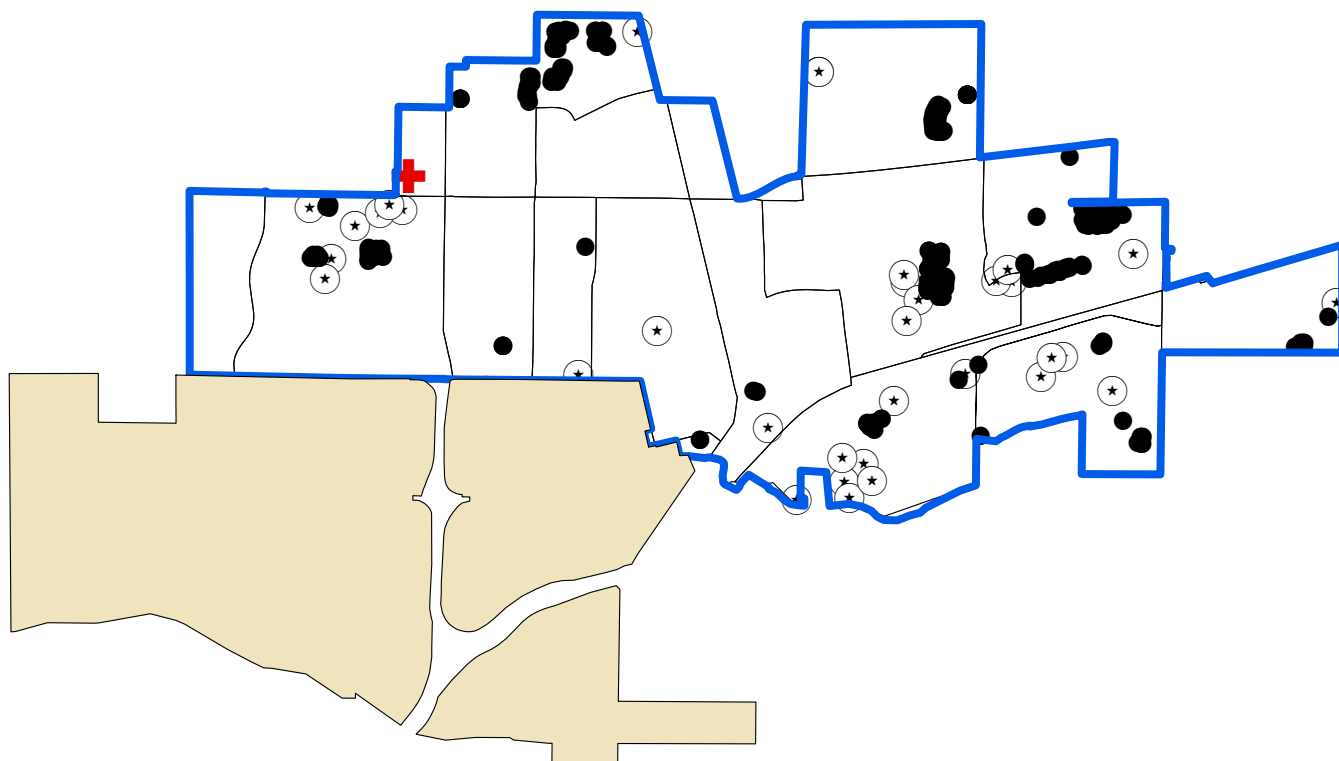
Legend

-  UC Davis
-  City Limits
-  CensusTracts
-  SF Inclusionary Affordable Housing
-  MF Inclusionary Affordable Housing
-  Food Distribution Services

0 0.35 0.7 1.4 2.1 2.8 Miles



Social Services in Davis



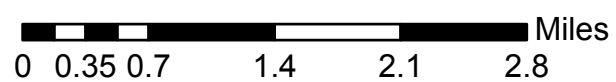
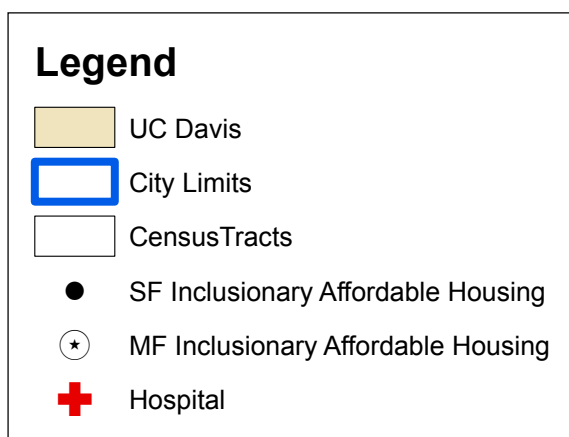
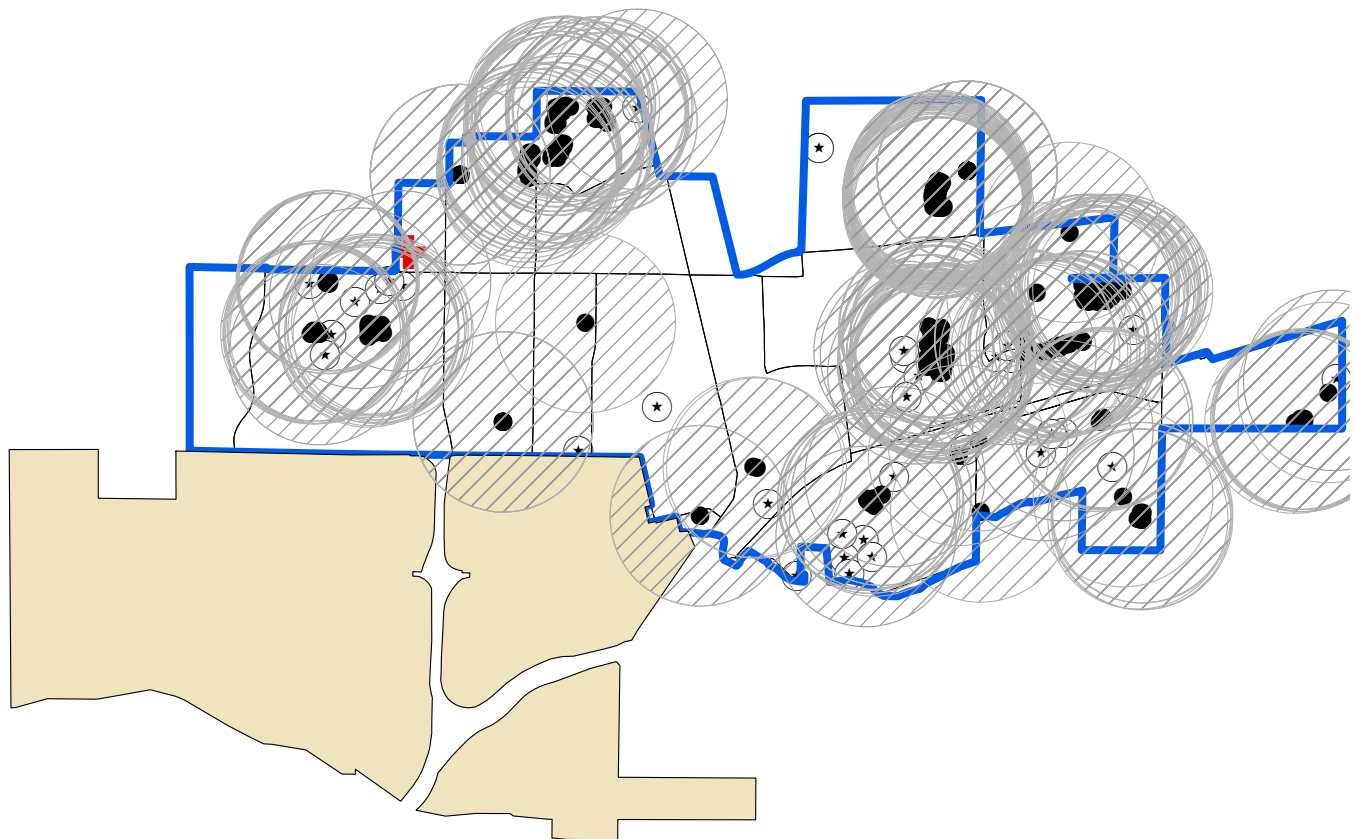
Legend

-  UC Davis
-  City Limits
-  CensusTracts
-  SF Inclusionary Affordable Housing
-  MF Inclusionary Affordable Housing
-  Hospital

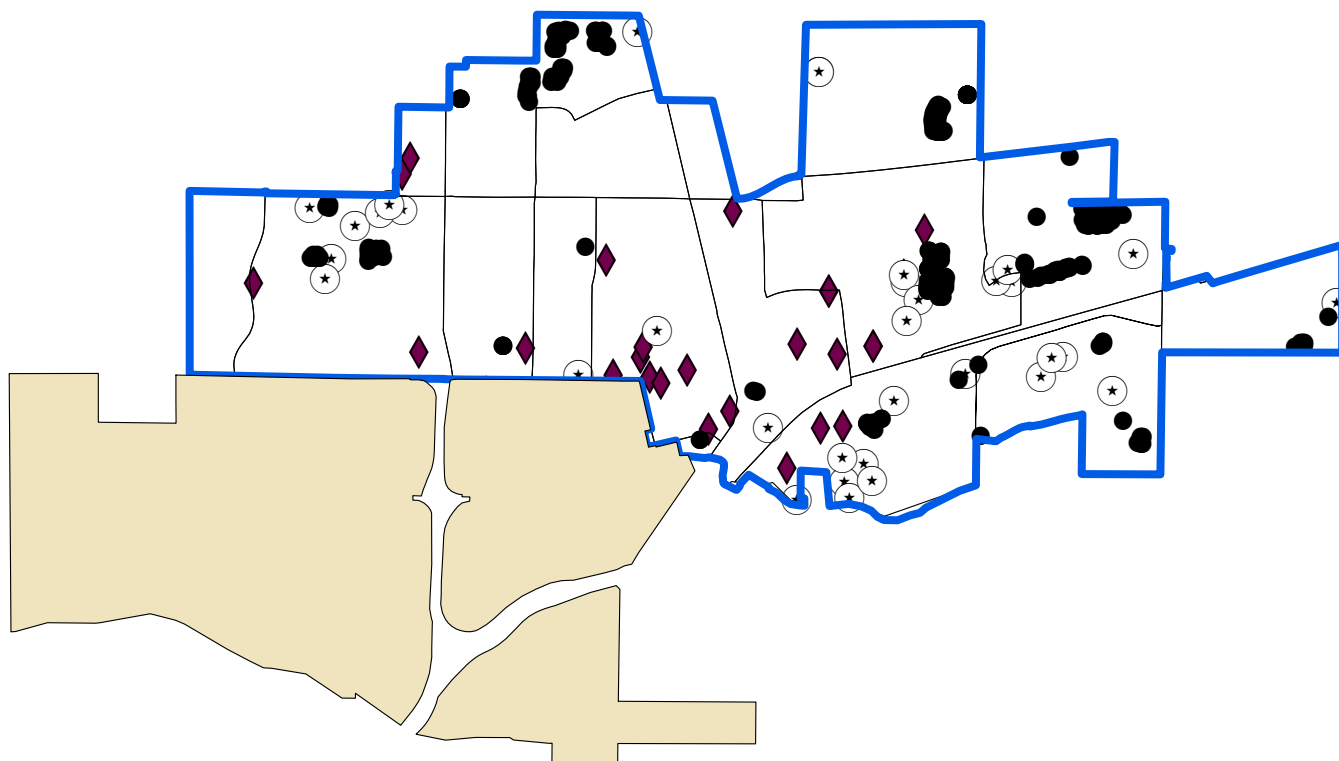
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Social Services in Davis



Social Services in Davis



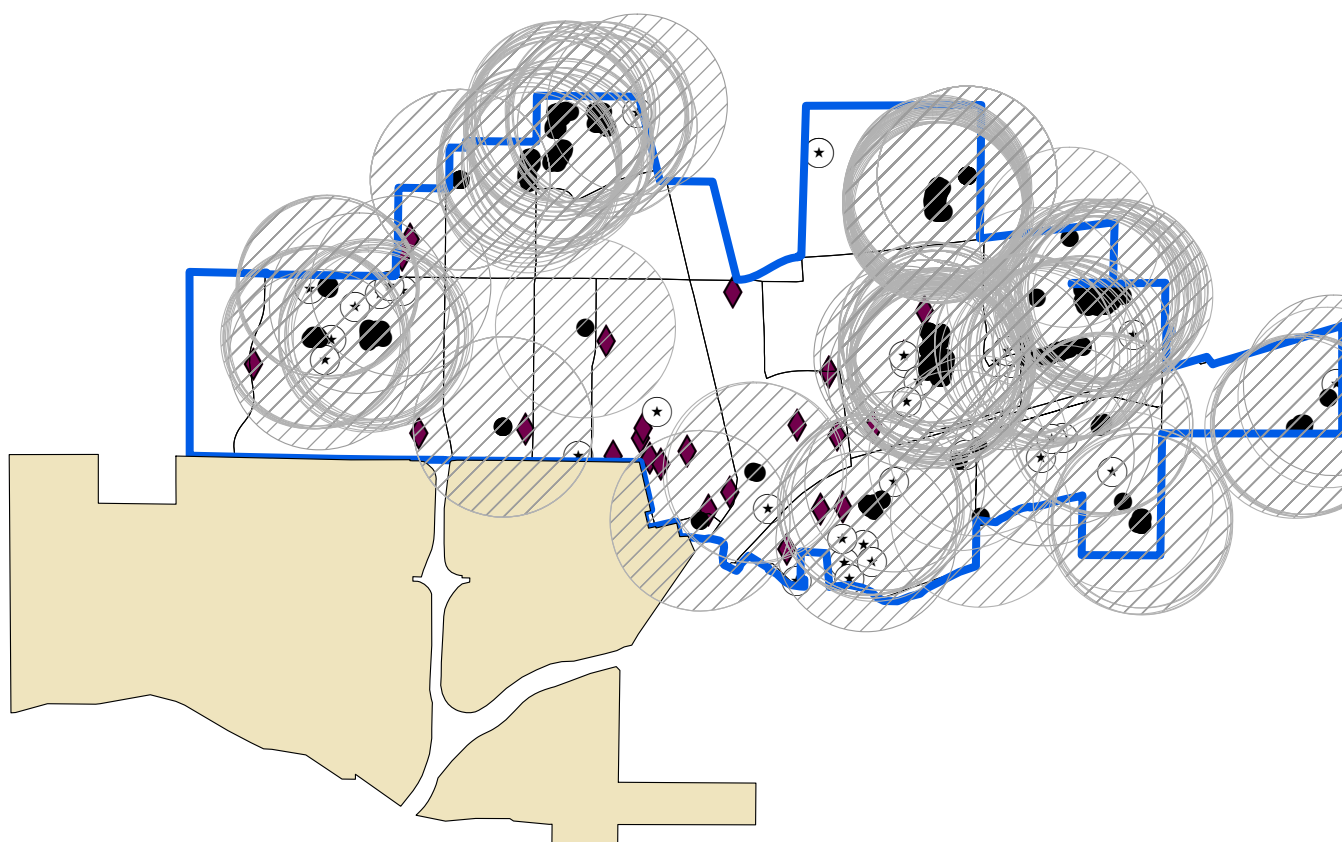
Legend

-  UC Davis
-  City Limits
-  CensusTracts
-  SF Inclusionary Affordable Housing
-  MF Inclusionary Affordable Housing
-  Other Services

0 0.35 0.7 1.4 2.1 2.8 Miles



Social Services in Davis



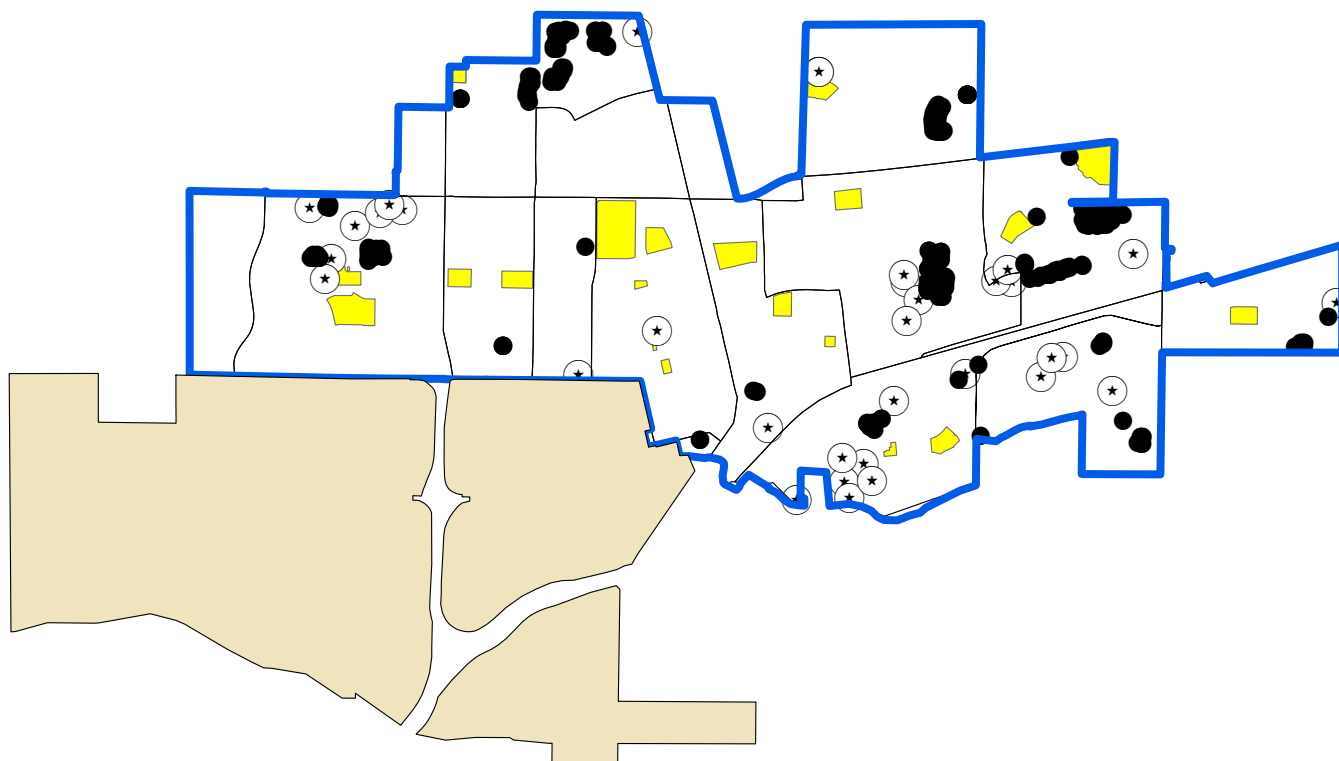
Legend

-  UC Davis
-  City Limits
-  CensusTracts
-  SF Inclusionary Affordable Housing
-  MF Inclusionary Affordable Housing
-  Other Services

0 0.35 0.7 1.4 2.1 2.8 Miles



Social Services in Davis



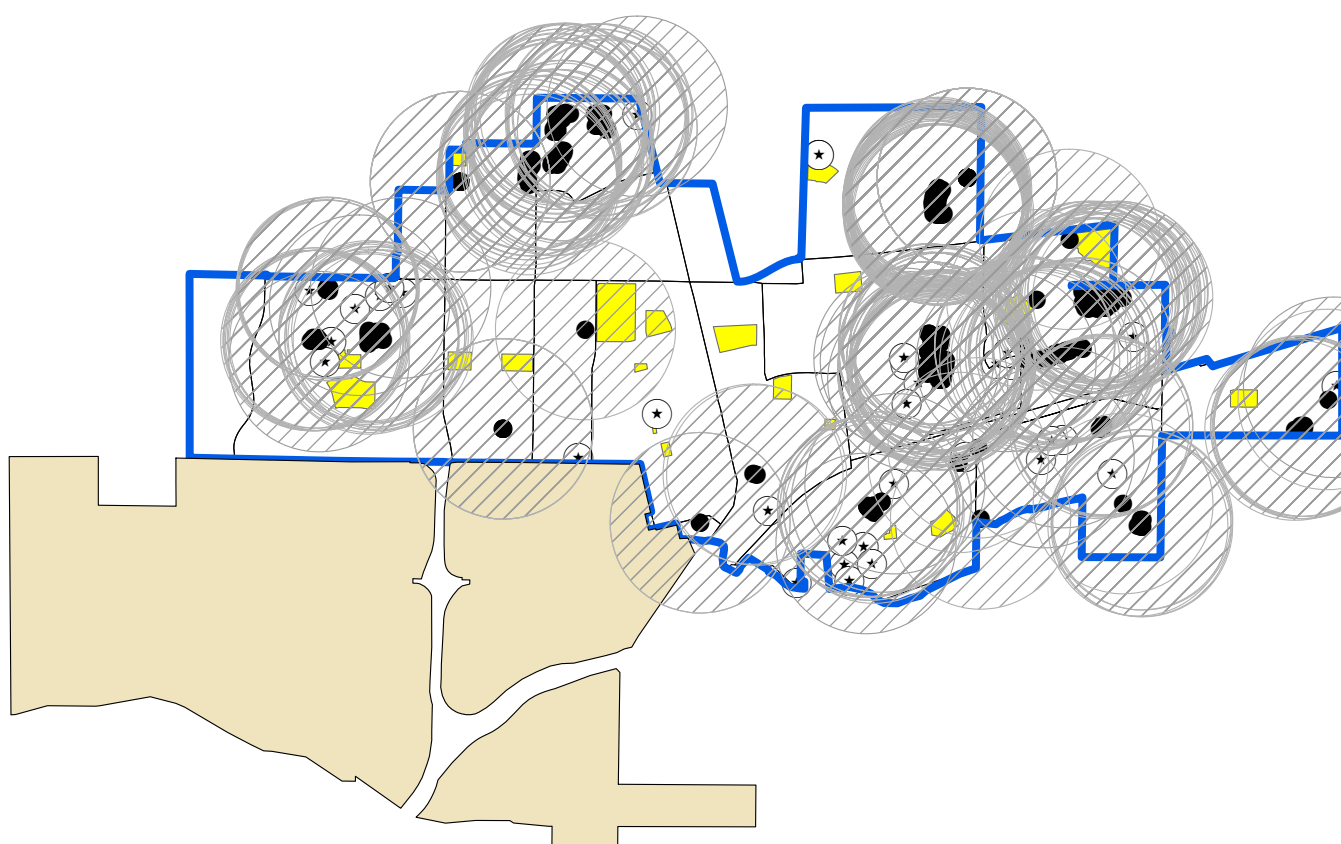
Legend

-  UC Davis
-  City Limits
-  CensusTracts
-  SF Inclusionary Affordable Housing
-  MF Inclusionary Affordable Housing
-  Schools

0 0.35 0.7 1.4 2.1 2.8 Miles



Social Services in Davis



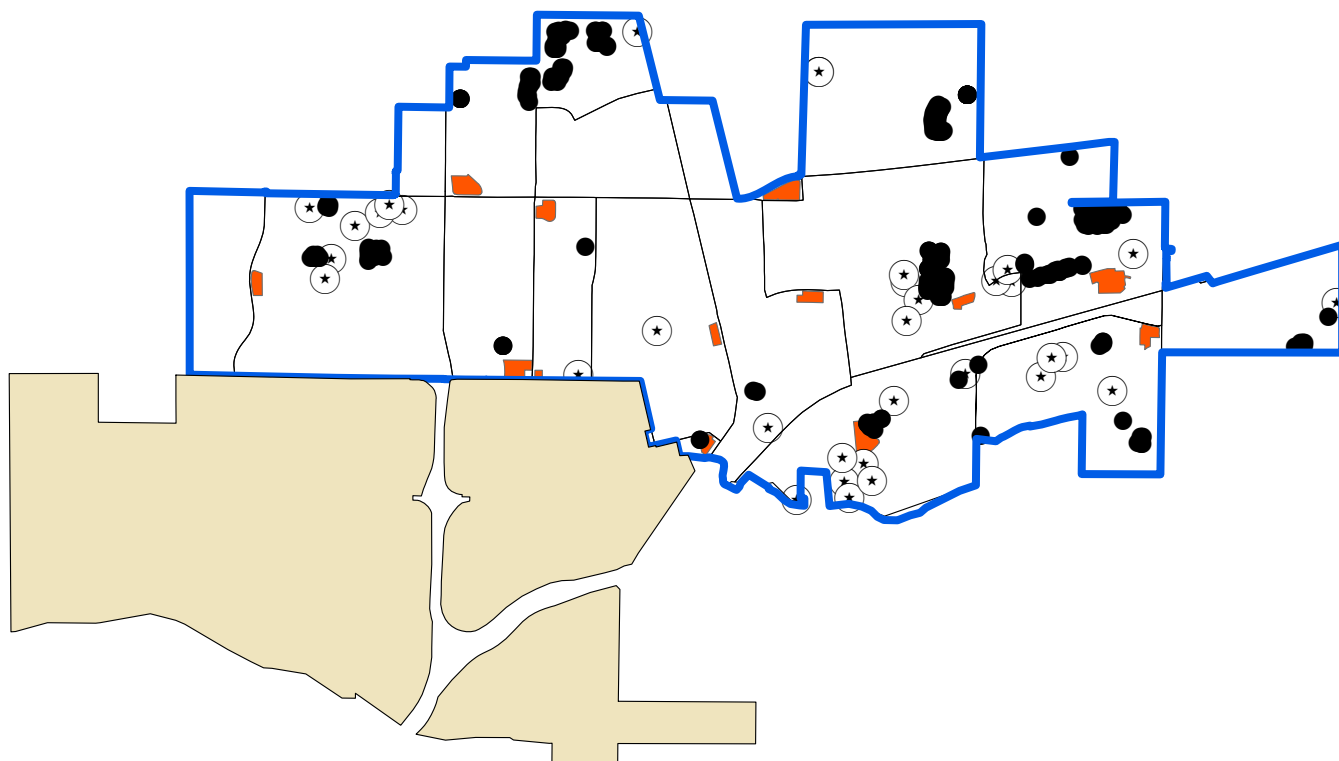
Legend

-  UC Davis
-  City Limits
-  CensusTracts
-  SF Inclusionary Affordable Housing
-  MF Inclusionary Affordable Housing
-  Schools







0 0.35 0.7 1.4 2.1 2.8 Miles



Social Services in Davis



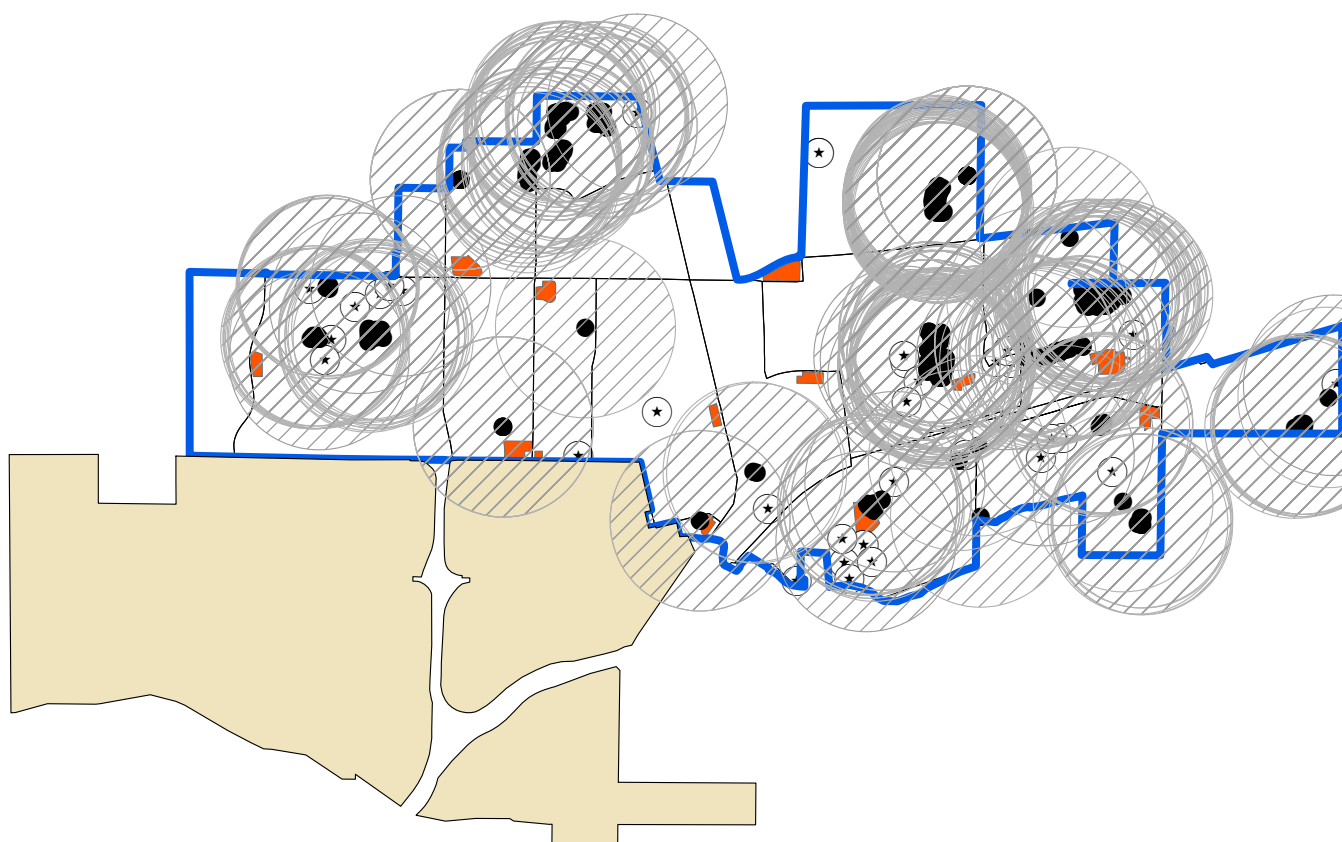
Legend

-  UC Davis
-  City Limits
-  CensusTracts
-  SF Inclusionary Affordable Housing
-  MF Inclusionary Affordable Housing
-  Shopping Centers






0 0.35 0.7 1.4 2.1 2.8 Miles



Social Services in Davis



Legend

-  UC Davis
-  City Limits
-  CensusTracts
-  SF Inclusionary Affordable Housing
-  MF Inclusionary Affordable Housing
-  Shopping Centers

0 0.35 0.7 1.4 2.1 2.8 Miles



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