Spotlight on Underserved Markets

# LIHTC in Rural Lower Mississippi Delta

# LIHTC in Rural Lower Mississippi Delta

## A Comprehensive Overview of the Region's LIHTC Market and the Structural Drivers that Present Challenges and Opportunities for the Broader Multifamily Rental Market

The Lower Mississippi Delta (also referred to as the Delta) has a unique history that has had a profound social and economic impact on the entire nation. From being the birthplace of jazz and blues to the region's status as one of the nation's most important agricultural resources, the Delta's influence has extended far beyond its borders. Despite this, the rural areas in the Lower Mississippi Delta have the distinction of being one of the most underserved housing markets in the country.

Today, 5.2 million people live in the rural parts of the Delta region, which runs along the Mississippi River and includes portions of eight states between Illinois and Louisiana. While the Lower Mississippi Delta has played an integral role in the development of our nation, the region has also been characterized by economic difficulties, racial tensions and high levels of poverty for much of its history.

Providing affordable, adequate housing anywhere in the nation is a challenge. However, difficulties are felt more acutely in the rural Lower Mississippi Delta, where incomes are often too low to generate enough rental revenue to make even subsidized housing feasible, and where government and economic incentives often do not support sufficient housing development.

In this paper, we explore the region's multifamily housing market with a special focus on the primary means of developing affordable housing in undeserved markets: the Low-Income Housing Tax Credit (LIHTC) program. To support our analysis, we compiled and analyzed multiple data sources, conducted market research and consulted market participants. Our goal is to provide clarity regarding the market size and distribution of tax credits in rural Lower Mississippi Delta and examine challenges that may need to be addressed in order to create more affordable rental housing in that area.

Below are some of the key findings of our research:

- There are 5.2 million residents in rural Lower Mississippi Delta. This represents 1.6% of the total U.S. population and 7.1% of the nation's rural population.
- Income in rural Lower Mississippi Delta is about 37% lower than the national average and 21% lower than the rural average.
- Population density, which is a driver of LIHTC housing and multifamily development generally, is very low in rural Lower Mississippi Delta.
- Rental housing, and multifamily rental housing in particular, is rare in rural Lower Mississippi Delta. Only 29.2% of households are renters (compared with 36.2% nationally). Of these renters, only 14.2% rent units in multifamily buildings (compared with 42.9% nationally). Single-family housing is the primary form of rental housing.
- The multifamily stock that does exist is supported by LIHTC at a higher rate than elsewhere in the country.
- Specifically, LIHTC supports 39.2% of the region's multifamily housing market – a rate that is more than three times greater than the national average and one and a half times greater than all rural areas.
- In rural Lower Mississippi Delta, an average of 28 properties and 1,160 units have been supported by LIHTC annually over the past 20 years, although the rate has been declining.
- Income levels are generally too low to support rents that will generate sufficient cash flows to build and operate decent and affordable housing in this region without public support.
- LIHTC development faces many challenges, but still plays a vital role in addressing the rental housing needs for lower-income families in rural Lower Mississippi Delta.

### *Overview of LIHTC and its Role in Supporting Multifamily Rental Housing in Rural Lower Mississippi Delta*

The LIHTC program is one of the primary means of creating and preserving affordable rental housing across the country, in both large and small markets. Since the program's inception in 1986, it has created or preserved over 3.1 million units of rental housing affordable to those making 60% of the area median income (AMI) or less.[1] Subsidy programs like LIHTC are commonly needed to provide capital for affordable rental housing in markets where it would otherwise be uneconomical to develop. However, while the LIHTC program has national reach, its efficacy in meeting local needs can vary by market and is highly dependent upon a variety of local conditions, state priorities, and developer interest and capabilities. This dependency is especially apparent in the nation's hardest to serve rural markets.

As part of our Spotlight on Underserved Market series, we have detailed the housing and LIHTC markets in rural Middle Appalachia and in Indian Areas. In both of these reports, we found that LIHTC-supported units comprised a disproportionately high percentage of the multifamily rental market. Part of the reason for this is that household income in these regions is very low; LIHTC is often the only economically viable way of providing affordable housing. This theme – high LIHTC activity driven in part by low incomes – continues in the rural Lower Mississippi Delta as we find that market conditions in this region are similar to those of other high-needs areas and populations.

## **Characteristics of Rural Lower Mississippi Delta and How They Affect the LIHTC Market**

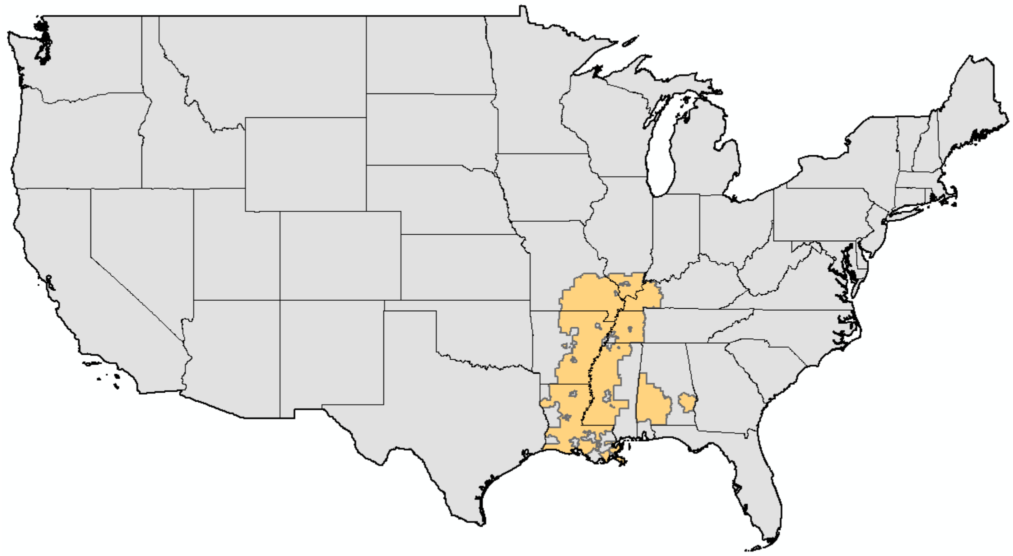
There are numerous demographic, economic and topographic factors that influence the ability to create and preserve affordable rental housing through LIHTC in this region. Because of this, the LIHTC market in rural Lower Mississippi Delta should not be viewed in isolation but instead with consideration to exogenous factors that are prominent throughout this region.

### *Geographic Definition*

The rural Lower Mississippi Delta straddles the lower portion of the Mississippi River and contains portions of eight states: Alabama, Arkansas, Illinois, Kentucky, Louisiana, Mississippi, Missouri and Tennessee.

While there are various ways to define the region, in this paper we view rural Lower Mississippi Delta as consisting of census tracts identified by the Federal Housing Finance Agency (FHFA) as part of the Duty to Serve (DTS) regulation (shown as yellow in the map below).[2]

**Exhibit 1: Map of Rural Lower Mississippi Delta**



Source: Mapping of Duty to Serve data (12 CFR 1282). Note that not all the Lower Mississippi Delta region is rural. This explains the areas within the boundaries of Lower Mississippi Delta that are not shaded yellow.

The Mississippi River helped to shape the boundaries of many states in the center of the country where the river flows. In the Lower Mississippi Delta region, Illinois, Kentucky, Tennessee and Mississippi all had the western portion of their border determined in large part by the river, while Missouri, Arkansas and part of Louisiana had the eastern portion of their state demarcated by the river. The rural areas of the states near the southern part of the Mississippi River, which collectively make up the rural Lower Mississippi Delta, share distinct cultural and demographic characteristics that are somewhat unique compared with most other regions of the country.

As was the case for rural Middle Appalachia, the boundary of the rural Delta was determined by common cultural and topographical factors, thus explaining its unusual pattern that does not follow state lines. Although the housing market and certain demographic characteristics are similar across the region, housing development is determined locally and influenced by the laws, regulations and priorities of the different states. These differences can affect the emphasis on, and feasibility of, LIHTC development across the region.

### *Population*

Approximately 5.2 million people live in rural areas of the Lower Mississippi Delta, which represents 7.1% of the nation's rural population and 1.6% of the nation's total population.

The percentage of each state's population that lives in rural Lower Mississippi Delta varies drastically. Roughly a third of Mississippi's population lives in the rural Delta. This is very high considering that only 23.1% of the nation's population lives in a rural area.[3] In Illinois, 1.9% of the population lives in the rural Delta, which is the smallest of all Lower Mississippi Delta states in both relative and absolute terms.

**Exhibit 2: Population of Rural Lower Mississippi Delta**

| Region | Population | | |
|---|---|---|---|
| | Entire State | Rural Lower Mississippi Delta | % in Rural Lower Mississippi Delta |
| **Alabama** | 4,850,771 | 371,112 | 7.7% |
| **Arkansas** | 2,977,944 | 813,376 | 27.3% |
| **Illinois** | 12,854,526 | 241,444 | 1.9% |
| **Kentucky** | 4,424,376 | 447,266 | 10.1% |
| **Louisiana** | 4,663,461 | 1,215,517 | 26.1% |
| **Mississippi** | 2,986,220 | 988,913 | 33.1% |
| **Missouri** | 6,075,300 | 624,598 | 10.3% |
| **Tennessee** | 6,597,381 | 521,188 | 7.9% |
| **Rural Lower Mississippi Delta** | 5,223,414 | | 100.0% |
| **Rural (Nation)** | 74,018,433 | | 7.1% |
| **National** | 321,004,407 | | 1.6% |

Source: Freddie Mac Tabulations of 2017 5-Year American Community Survey

Outmigration[i] has historically been an issue in the Lower Mississippi Delta, especially in rural areas. According to migration data from the Internal Revenue Service (IRS), the entire Delta region (rural and nonrural) lost an average of approximately 14,500 households[ii] over the past three years due to outmigration.[4]

The IRS only reports on the state and county level, which is typically not geographically granular enough to determine rural status – a necessary condition for the DTS definition of the Lower Mississippi Delta. However, by examining the Lower Mississippi Delta counties by rural percentage, we can roughly gauge how rural areas fare in comparison with urban areas. Generally, counties in the Lower Mississippi Delta with a higher percentage of rural census tracts had a higher outflow-to-inflow ratio. For counties that are entirely rural, the outflow-to-inflow ratio over the past three years for which data exists was 1.108, meaning that there were 10.8% more households moving out than moving in. For counties where at least half of the tracts are nonrural, this ratio was 1.052, representing a 5.2% net change.

### *Economics*

Agriculture and manufacturing have historically been the primary economic drivers in rural Lower Mississippi Delta, although the area has started to diversify into other industries, namely tourism and gaming.[5] In the country overall, both agriculture and manufacturing have been declining and the effect is felt more acutely in this region, which helps to explain the modern-day disparity of income levels in rural Lower Mississippi Delta compared with the rest of the nation. The median household in rural Lower Mississippi Delta earns merely 62.8% of the national median. Renters fare slightly worse, earning only 58.2% of the national median. Household earnings are low even for rural standards; rural Lower Mississippi Delta households still earn only 78.7% of the average rural household.

[i] This measurement of outmigration is based on federal tax returns. It refers to the number of households in a given year that filed taxes in Lower Mississippi Delta and then filed taxes outside of this region the following year.
[ii] The IRS tracks tax returns by taxpayer, not by households. However, they cite the number of returns (used here) as a proxy for households. Data is lagged by about 3 years.

**Exhibit 3: Income in Rural Lower Mississippi Delta**

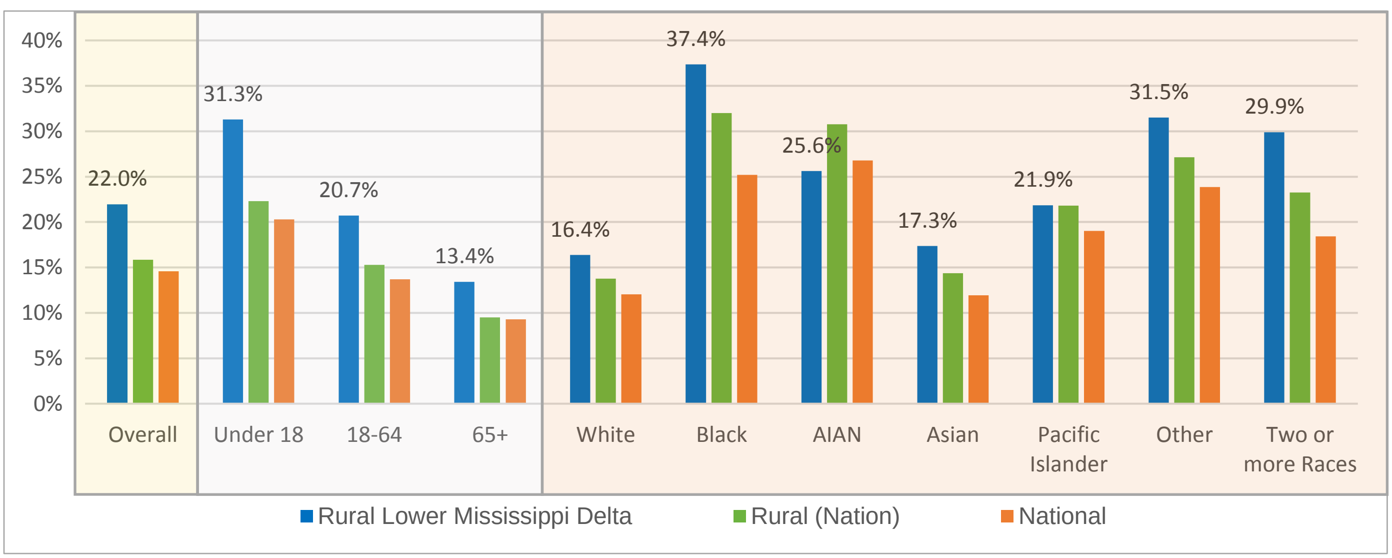
| Region | Median Household Income | % of National Median | Median Renter Household Income | % of National Median |
|---|---|---|---|---|
| **Alabama** | $30,295 | 52.5% | $17,079 | 46.6% |
| **Arkansas** | $35,666 | 61.9% | $22,064 | 60.2% |
| **Illinois** | $40,750 | 70.7% | $21,800 | 59.5% |
| **Kentucky** | $39,533 | 68.6% | $22,590 | 61.6% |
| **Louisiana** | $37,432 | 64.9% | $21,549 | 58.8% |
| **Mississippi** | $34,130 | 59.2% | $20,175 | 55.0% |
| **Missouri** | $35,714 | 61.9% | $21,996 | 60.0% |
| **Tennessee** | $37,620 | 65.3% | $22,497 | 61.4% |
| **Rural Lower Mississippi Delta** | $36,200 | 62.8% | $21,321 | 58.2% |
| **Rural (Nation)** | $45,999 | 79.8% | $27,683 | 75.5% |
| **National** | $57,652 | 100% | $36,653 | 100% |

Source: Freddie Mac Tabulations of 2017 5-Year American Community Survey

Consistent with these findings, poverty rates in rural Lower Mississippi Delta exceed the national average. The overall poverty rate for this region is 22.0%, which is substantially higher than the national rate of 14.6%. This observation is true across almost every demographic group that we analyzed (as seen in Exhibit 4 below).

Nationally, younger people are more likely to be below the poverty line. In rural Lower Mississippi Delta, this trend is felt more acutely. Between the rural Delta and the nation, the disparity in the poverty rate for those under the age of 18 is larger than for those who are at least 65 years old. In other words, childhood poverty rate is disproportionately high in the rural Lower Mississippi Delta. This finding suggests that the region is more susceptible to low incomes in the future since high childhood poverty is generally associated with lower lifetime economic opportunity.[6]

**Exhibit 4: Poverty in Rural Lower Mississippi Delta**




Source: Freddie Mac Tabulations of 2017 5-Year American Community Survey

Race has played an integral role in shaping the social and economic progress in the rural Lower Mississippi Delta.[5,7,8] Economic disparities related to race are more evident in this region than in other areas of the country in part because of the high percentage of African Americans living in this region; specifically, 25.6% of the region is composed of African Americans, compared with 12.7% for the nation.

The consequences of racial inequity are felt to this day, and economic statistics such as poverty rate and income highlight the severity of the issue. In the rural Lower Mississippi Delta, the median black household in this region earns roughly $23,450 per year, which is more than 35% less than the median for the whole region.[3]

The national poverty rate for African Americans is 25.2%, which is more than 10 percentage points higher than the rate across all racial groups. As seen above in Exhibit 4, the African American population living in rural Lower Mississippi Delta experiences poverty at a higher rate than the population average at 37.4%. Higher rates of poverty generally exacerbate the issue of finding affordable housing.

While important to this discussion, a more in-depth, nuanced discussion of the racial history of this region is complex and beyond the scope of this paper. For more information, please see the Housing Assistance Council's "Taking Stock" reports (2002 report; 2013 report) or Clyde Woods's book titled "Development Arrested: The Blues and Plantation Power in the Mississippi Delta"[iii].

The efficacy of LIHTC in this region depends on the income of the residents in the area. This is because rental rates of units supported by LIHTC are restricted by local income. Since the median income in rural Lower Mississippi Delta is significantly lower than other parts of the country (as seen above in Exhibit 3), the maximum amount that property owners can charge for rent is also significantly lower, thus lowering operating income and making it particularly difficult to create and maintain multifamily rental properties. Due to low property income, most properties are unable to support much debt.

### *Population Density and Distribution*

Population density is a key factor in determining the extent of LIHTC housing, and multifamily housing generally, since an area needs a sufficient number of renters to create the need for multifamily properties. The nation's 50 most densely populated counties contain roughly a third of the nation's multifamily units despite being home to only 17.6% of the population.[3]

This trend is apparent in rural Lower Mississippi Delta as well; areas with higher population density tend to have a higher concentration of LIHTC units. This is discussed in more detail on page 11.

The overall average population density in the rural Delta is 36.2 people per square miles, which is substantially lower than the national average of 90.9 people per square mile. However, in comparison with the nation, rural Lower Mississippi Delta has relatively uniform population distribution. Although there is considerable deviation between states, ranging from 22.0 people per square mile in Alabama to 60.3 people in Kentucky, density on the county level in this region varies significantly less than it does at the national level.[3]

The median population density of counties[iv] in the rural Delta is 32.9 people per square mile, which is just below the average density of 36.2 described above. In rural Lower Mississippi Delta, 60% of all counties fall within 50% of the median population density. That is, 60% of counties have a population density that is between 16.4 (32.9*0.5) and 49.3 (32.9*1.5). In all rural areas and the nation, the percentage of

---

[iii] Sections of the book are available here. There are many references to the issue of race in the Delta in this paper. One example is on page 23.

[iv] Whenever we discuss rural Lower Mississippi Delta in this paragraph, the numbers refer only to the rural parts of counties.

counties with population densities that fall within 50% of the median is only 36% and 31%, respectively. This lower percentage for the rural Delta signifies that fewer counties have population densities that are far away from the median. Overall, the variation in density in rural Lower Mississippi Delta is more than two and a half times lower than that of the nation.[v]

### *Population Density and Distribution – Along the Mississippi River*

In addition to studying population density in the entire region, we also focused our analysis on how populations form along this region's defining topographical feature: the Mississippi River. The rural parts of the Lower Mississippi Delta do not exhibit significantly different population density than rural areas elsewhere in the region. The average population density of areas in rural Lower Mississippi Delta that are within 10 miles of the Mississippi River is 34.9 people per square mile. For areas within 5 miles of the river, the density is 37.5. Both of these are comparable to the regional average of 36.2 people per square mile. Within 1 mile of the Mississippi River, the average density drops to 25.4.

The story changes when the entire region is examined – not just the rural parts. Only including rural areas negates the effect of large, densely-packed cities. Three of the largest cities in the region, New Orleans, Memphis and Baton Rouge, are located along the Mississippi River and account for about 13% of the Lower Mississippi Delta's population. These cities have a density that is about 34 times greater than that of the entire Lower Mississippi Delta. The impact of this is reflected in the density of areas along the Mississippi River. The average density of the entire region is 65.1 people per square mile, whereas the corresponding rate for areas within 5 miles of the river is 147.1 – about 125% greater.[3]

### *Population Distribution: Age*

Age distribution is an important factor in housing because an older population typically suggests a low rentership rate. This is certainly the case for the rural Lower Mississippi Delta where the population skews older than the nation as a whole. Approximately 30.3% of rural Lower Mississippi Delta's population is between the ages of 20 and 44, while the national rate is 33.4%. Conversely, 17.1% of the rural Delta's population is 65 and over, compared with 14.9% nationally.

Although these differences seem small, they do suggest that if the population composition of rural Mississippi Delta were the same as that of the nation, there would be 160,000 more people between 20 and 44, and 118,000 fewer people age 65 and older.

According to research by the National Bureau of Economic Research, an aging population hinders economic growth due to slower productivity growth and slower labor force growth.[9]

**Exhibit 5: Comparison of Population Composition**

| Age Group | Population Composition by Region | |
|---|---|---|
| | National | Rural Lower Mississippi Delta |
| **Under 5** | 6.2% | 6.0% |
| **5 to 9** | 6.4% | 6.4% |
| **10 to 14** | 6.5% | 6.5% |
| **15 to 19** | 6.6% | 6.6% |
| **20 to 24** | 7.0% | 6.5% |
| **25 to 34** | 13.7% | 12.0% |
| **35 to 44** | 12.7% | 11.8% |
| **45 to 54** | 13.4% | 13.3% |
| **55 to 59** | 6.7% | 7.1% |
| **60 to 64** | 6.0% | 6.5% |
| **65 to 74** | 8.6% | 10.0% |
| **75 to 84** | 4.4% | 5.3% |
| **85 and over** | 1.9% | 1.9% |

Source: Freddie Mac Tabulations of 2017 5-Year American Community Survey

[v] This refers to the coefficient of variation, not standard deviation, and includes only the 10-90% of counties to account for outliers.

*Housing Type Distribution*

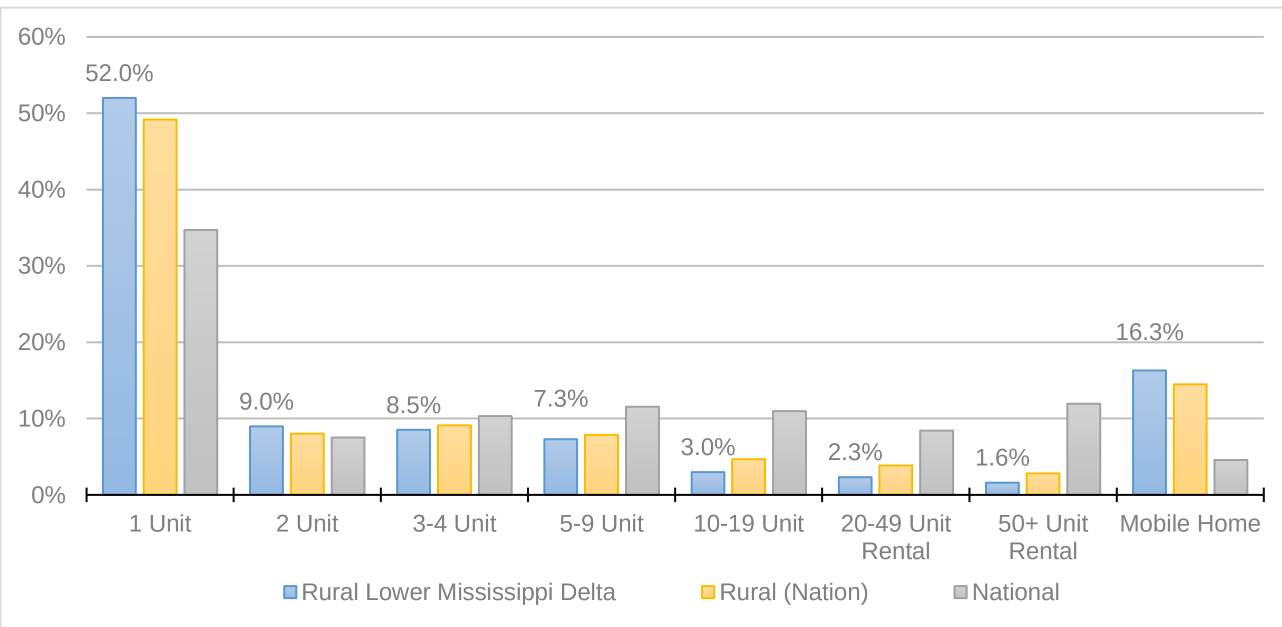
The homeownership rate in rural Lower Mississippi Delta is very high. Approximately 70.8% of households are owners in this region, which is nearly seven percentage points higher than the national average but about two and a half percentage points lower than all rural areas.[3]

Among individual states in the Delta, Alabama and Arkansas had the lowest rate of rural homeownership at 69.1%. This is a curious finding since these two states had the lowest population density, which ordinarily correlates to higher homeownership.

Despite the higher rate of homeownership, renting in rural Lower Mississippi Delta is not uncommon, though large apartment complexes are rare. The slight majority of renters live in one-unit single-family properties. Single-family rentals as a whole (1- to 4-unit structures) make up 69.5% of all renters. This relates to 52.6% nationally and 66.3% in rural areas generally. The remaining 30.5% of rural Lower Mississippi Delta renters are split between multifamily (14.2%) and mobile homes/other (16.3%).

This rate of multifamily housing is extremely low compared with the national rate of 42.9%. Large multifamily properties are even more rare; only 1.6% of rental units are in properties containing 50 or more units – over seven times lower than the national average of 11.9%. This is also low compared with all rural areas nationally, where the rate is 2.8%. On the other hand, the rate of mobile home rentals is more than 3.5 times higher than the national average, as seen in Exhibit 6.

**Exhibit 6: Rental Units in Rural Lower Mississippi Delta by Property Type**




Source: Freddie Mac Tabulations of 2017 5-Year American Community Survey

**Overview of the LIHTC Market in Rural Lower Mississippi Delta**

*LIHTC Market Size*

Rural Lower Mississippi Delta contains 889 multifamily properties with an active LIHTC subsidy, supporting 32,262 units.[vi,10] This represents 2.8% of the national total for LIHTC properties and 1.4% for units. There does not appear to be a strong geographic allocation bias. Over the past 20 years, an annual average of 28 properties and 1,160 units have been placed into service in rural Lower Mississippi Delta through the LIHTC program. The annual allocation rate appears to have declined over the past two decades; the average number of units from 1999 to 2008 was about 1,350 but has since declined to 960 annually. However, the rate of production varies widely throughout this period so there is no indication that this trend will necessarily continue in the future.

In the eight states that make up Lower Mississippi Delta[vii], 43.5% of LIHTC properties are located in rural areas, leaving 56.5% in suburban and urban areas. This rural share in the Delta is substantially higher than the national rate of 29.3%. In both geographies, the proportion of rural units is lower, with 27.1% in these eight states and 16.0% for the nation.[10] This result is intuitive because rural LIHTC properties generally contain fewer units than their suburban and urban counterparts.

Both renters and owners in the rural Delta tend to prefer single-family homes. Therefore, not surprisingly, single-family style communities or scattered site developments with single-family homes are common forms of LIHTC housing in the rural Delta.

*LIHTCs Support a Substantial Share of Multifamily Renters in the Region*

We observe a very large disparity between rural Lower Mississippi Delta and other regions when examining the size of the multifamily rental market relative to the entire housing market. As seen in Exhibit 7, the rate of multifamily rental housing in rural Lower Mississippi Delta is just over a quarter of the national rate. However, when the rate of LIHTC housing is compared with the nation, we find that LIHTC supports a relatively high percentage of multifamily renter households but a relatively low percentage of all households.

That is, while LIHTC housing is underrepresented in this region in terms of total households, we find that LIHTC housing comprises a disproportionate share of multifamily rental housing. Specifically, of the roughly 82,000 multifamily rental units in rural Lower Mississippi Delta, 32,262 (39.2%) are supported by LIHTC. This is about 50% higher than in all rural areas and is more than three times higher than the nation. From this finding, we can conclude that multifamily is far less common in the rural Lower Mississippi Delta region, but that the multifamily housing that does exist is supported by LIHTC subsidies at a higher rate than elsewhere in the country.

[vi] Estimates are based on data released in September of 2019.
[vii] These statistics are not limited to the portion of these states in Lower Mississippi Delta; they refer to the entire state.

**Exhibit 7: Geographic Distribution and Concentration of LIHTC Units by Region**

| Region | LIHTC Subsidized Units[viii] | Multifamily Renter Households as % of all Households | LIHTC Subsidized Units as a % of: | | |
|---|---|---|---|---|---|
| | | | Households | Renter Households | Multifamily Renter Households |
| **Alabama** | 4,623 | 5.1% | 3.3% | 10.8% | 64.6% |
| **Arkansas** | 5,050 | 4.2% | 1.6% | 5.1% | 37.7% |
| **Illinois** | 613 | 3.6% | 0.6% | 2.7% | 18.1% |
| **Kentucky** | 1,228 | 5.5% | 0.7% | 2.4% | 12.6% |
| **Louisiana** | 5,782 | 2.8% | 1.3% | 4.7% | 46.5% |
| **Mississippi** | 8,177 | 5.4% | 2.3% | 7.6% | 41.6% |
| **Missouri** | 3,920 | 3.8% | 1.6% | 5.3% | 42.3% |
| **Tennessee** | 2,869 | 3.6% | 1.4% | 4.8% | 39.4% |
| **Rural Lower Mississippi Delta** | 32,262 | 4.1% | 1.6% | 5.6% | 39.2% |
| **Rural (Nation)** | 382,387 | 5.1% | 1.4% | 5.1% | 26.4% |
| **National** | 2,396,611 | 15.5% | 2.0% | 5.6% | 13.0% |

Sources: Freddie Mac Tabulations of 2017 5-Year American Community Survey and the National Housing Preservation Database. Shading is based on LIHTC prevalence. Blue shading indicates that the number of a relatively high percentage of LIHTC units are available for the given population (e.g., Renter Households). Red shading indicates that relatively few LIHTC units exist for the population.

Consistent with our findings for other high-needs regions, the relative abundance of LIHTC does not indicate oversupply in this region but instead of a small multifamily market that needs subsidies to be economically viable. Unsubsidized housing is much more difficult to support in the rural Delta due to the low incomes in the region. Because incomes are so low, attainable market-rent levels are often unable to cover the cost of financing and operation. This prevents unsubsidized projects from earning a positive return on investment. From our own research and industry outreach, we have learned that subsidized housing makes up such a large percentage of the total multifamily rental market because, in many cases, it is the only feasible way of providing it.

Rural Lower Mississippi Delta has a relatively high concentration of LIHTC units outside of metropolitan areas (MSAs). Rural areas that are outside of MSAs contain 75.0% of the region's population but contain 81.9% of the LIHTC units.[10]

This finding ostensibly suggests that less densely populated areas have a disproportionally high number of LIHTC units since MSAs are generally more densely populated than other areas. But it is important to remember that under the Duty to Serve regulation, all areas outside of MSAs are considered rural, whereas tracts in MSAs can be either rural or nonrural.[2] Therefore, most of the densest areas are excluded from the DTS definition of Lower Mississippi Delta. While nonrural MSA tracts in Lower Mississippi Delta have a density of 650.4 people per square mile, the corresponding rate in rural MSA tracts is merely 38.4 people per square mile. The rate in this region for rural areas outside of MSAs is 35.5.

[viii] LIHTC Subsidized Units only includes units in multifamily properties (5+ units). There are LIHTC units that are in properties with fewer units, but they are very uncommon and not the focus of this paper.

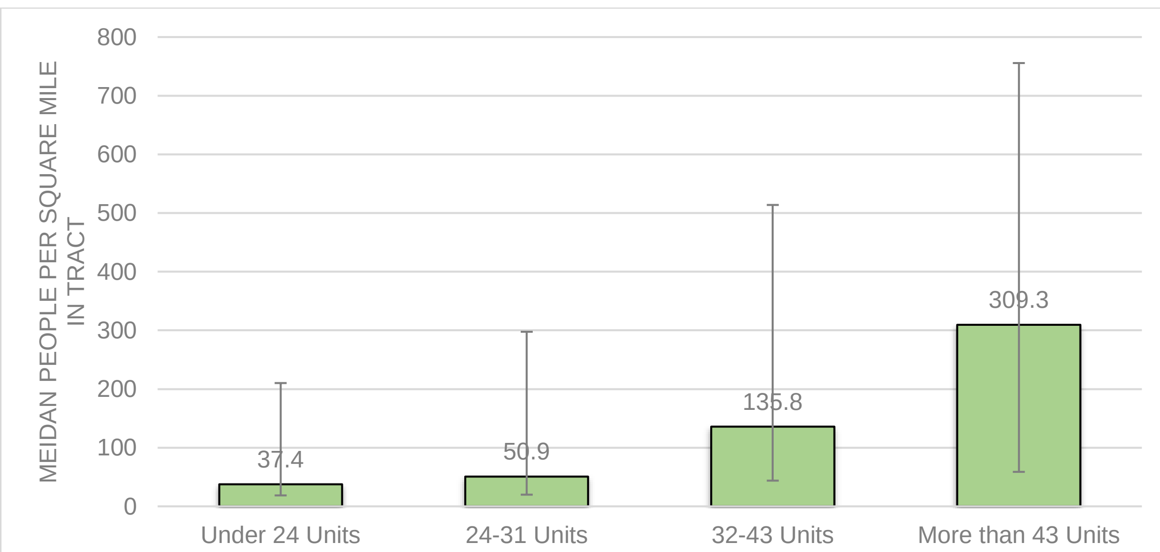
Despite the low population density in the region generally, LIHTC properties are located in relatively dense areas. The average census tract population density of LIHTC properties in this region is 344.8 – significantly higher than the average for the region. In addition, of the 889 properties in the region, 617 of them (69.4%) are in tracts that are denser than average. These findings indicate that, consistent with intuition, even in rural areas in this region, higher density areas more easily attract LIHTC Investment.

### *LIHTC Properties in Rural Lower Mississippi Delta Are Small and Concentrated in Dense Areas*

LIHTC properties in rural Lower Mississippi Delta tend to have relatively few units with very little variation in size.[ix] The average (mean) LIHTC property size in the region is about 36 units, compared with about 72 units nationally. The mean number of units in rural Lower Mississippi Delta is only 13.4% greater than the median (32) whereas the mean in the nation is 47.1% greater than the median (49).[10] The smaller percentage for the rural Delta indicates smaller property size variation.

Rural areas are generally not able to support large multifamily structures, and rural Lower Mississippi Delta is no exception. Low population density is largely to blame for the small multifamily property sizes since large complexes are tough to construct and sustain with a sparsely populated area that generally prefers homeownership. As seen in Exhibit 8, there is a strong positive correlation between population density and structure size.

**Exhibit 8: Median Tract Population Density by Structure Size in Rural Lower Mississippi Delta**




Sources: Freddie Mac Tabulations of 2017 5-Year American Community Survey and the National Housing Preservation Database. The vertical lines represent the 25th and 75th percentile population densities, whereas the green columns represent the median.

Despite low population density, infrastructure is generally not an impediment to LIHTC construction in most parts of rural Lower Mississippi Delta. From our outreach, we learned that there have been cases where local sewage treatment plants have been built for LIHTC projects and that roads sometimes needed to be extended, but that the prevalence and degree of difficulty of these tasks does not have a major impact on development in most cases.

[ix] When we talk about units in this section, we are discussing LIHTC-assisted units, not total units for the property. The results are very similar regardless of which unit count is used. We decided to use assisted units to stay consistent with the rest of the paper.

*LIHTC Properties Overwhelmingly Rely on 9% Credits and Rural Set-Asides of Incentives*

Nine percent tax credits generate a larger share of LIHTC units in rural Lower Mississippi Delta than they do nationally: 70.7% compared with 55.0%. Of the 715 properties in rural Lower Mississippi Delta for which credit data is available, 484 properties and 18,804 units are supported by 9% credits, while 388 properties and 14,372 units are supported by 4% credits.[x,10]

This reliance on 9% credits is important for two reasons: (1) they generate more equity and are generally required when a property cannot support debt, and (2) they are competitive. In other words, in order for properties to receive 9% LIHTCs in the region, they must either benefit from a rural set-aside in the state's Qualified Allocation Plan (QAP) or benefit from the presence of other incentives that allow them to out-compete other properties for 9% credit allocation. This is generally difficult without specific emphasis from the tax credit allocating authorities.

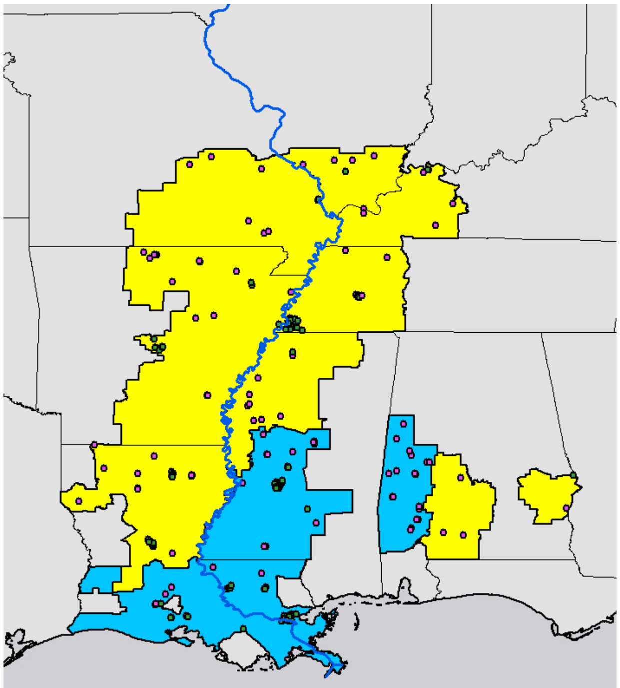
Several incentives have historically aided in the development of LIHTC properties in rural Lower Mississippi Delta. While states in this region typically do not explicitly incentivize development in the rural Delta, some of them promote rural projects. In 2018, Louisiana allocated roughly a quarter of all funds specifically for rural projects. In addition to explicit allocations of credits, rural development in this state is also eligible for a 30% basis boost.[11] This means that qualifying projects can receive 30% more tax credits under the LIHTC program. However, Louisiana changes their QAP frequently so their emphasis on rural can change from year to year. Mississippi does not have a set-aside for rural projects but does have a set-aside for smaller developments (which are more commonly found in rural areas).[12]

The Gulf Opportunity Zone Act of 2005 created a unique incentive for LIHTC in this region. Following Hurricane Katrina, the housing market throughout many parts of the southern Lower Mississippi Delta region was in critical condition. To spur its recovery, Congress granted additional financial aid for the construction of residential and nonresidential properties.[13]

Three states in the Lower Mississippi Delta – Alabama, Louisiana and Mississippi – were allocated an additional $323 million of funding for their LIHTC programs at that time. According to a 2008 Government Accountability Office report, these funds were immensely helpful in rebuilding the housing stock in this area; in Louisiana and Mississippi, LIHTC alone was projected to have replaced between 17% and 45% of the rentals units that were severely damaged by Hurricane Katrina.[14]

[x] It is not uncommon for a property to be supported by both 4% and 9% credits (i.e., overlap is possible).

**Exhibit 9: LIHTC Properties in GO Zones Across the Lower Mississippi Delta**



Source: Freddie Mac Mapping of the National Housing Preservation Database. Blue regions represent GO Zones. Pink markers represent rural properties and green markers represent urban properties. Map only includes 9% credit properties with a subsidy start year between 2006 and 2010.

Exhibit 9 shows the geographic distribution of LIHTC properties across the Lower Mississippi Delta, and specifically in Gulf Opportunity Zones (GO Zones) from 2006 to 2010 – the years when credits were allocated and units were being placed in service after Hurricane Katrina.[xi] It's important to note that while GO Zones prompted a great deal of new LIHTC activity, the objective was to replace the housing stock that was destroyed by the hurricane and not to expand the supply of housing above pre-Katrina levels.

Areas designated as GO Zones saw a sharp uptick in the number of new LIHTC units using 9% credits following the creation of these zones. In the prior five years to 2006 (period 1), only 12.7% of new 9% credit LIHTC units were located in what would become GO Zones. From 2006 to 2010 (period 2), this jumped to 50.5%. Between these two periods, GO Zones accounted for almost all the region's growth in LIHTC. The region's overall growth in the number of new LIHTC units was 44.4%, but areas outside of GO Zones actually contracted at a rate of 18.2%. This indicates that almost all growth was concentrated in GO Zones. Indeed, these areas experienced a 472.6% growth rate from period 1 to period 2. Some investors in GO Zone LIHTC projects were new to the region and the success that they had during this period motivated their continued investment.

As expected, most of the LIHTC development resulting from this Act took place in urban areas. Between period 1 and period 2, LIHTC activity in rural Lower Mississippi Delta shrunk by 4.8%[xii]. Most new activity came from the non-rural areas of the region, which experienced a growth of 78.3%. As a result, the share of new units that were rural dropped from period 1 and period 2 (40.8% to 26.9%). Although rural areas in GO Zones still experienced a decline, the magnitude of decline was less, contracting from 28.9% to 24.0%. This may be partly due to states promoting rural development. For example, Alabama's addendum to their 2006 QAP stated a desire for a balance for rural and urban areas.[14]

[xi] There is a time lag between when credits are allocated and when units are placed in service. This period from 2006 to 2010 captures a large portion of new development resulting from GO Zones.

[xii] FHFA's definition of rural did not exist during this period, so we are using the 2018 classification of rural. Although some rural areas today would not have been rural back then, and vice versa, we still believe that applying 2018 definitions to this period is appropriate since definitions don't tend to change dramatically over a relatively short period.

*Economics of LIHTC Development and Multifamily Housing*

The median rent in rural Lower Mississippi Delta is $578, compared with $982 for the nation and $690 for rural areas generally. This large disparity in rents between rural Lower Mississippi Delta and the nation, and even between rural areas, is largely a consequence of incomes that are too low to incentivize development of higher-priced units.

The pricing of multifamily rents is governed by the same principles as other goods in an economy: supply and demand. The supply side does not inherently present too many constraints; land in this area is relatively affordable and the cost of labor and materials does not differ significantly from the rest of the country.[xiii]

The primary issue for developers is on the demand side. The vast majority of this region lacks the population density to make multifamily housing feasible, which results in few properties. Even in areas that can support multifamily housing, rents are low because incomes are so low, which means that demand for higher-priced units is minimal. If property operators did raise rents to be consistent with national norms, multifamily rentals would be seen as a relatively expensive option compared with single-family rental and homeownership, and thus less enticing as a housing option. With that being said, it's possible that homeownership would still not be a suitable or feasible alternative due to low personal credit scores in the region. Of the five states with the lowest average credit scores, three are in rural Lower Mississippi Delta (Mississippi, Louisiana and Alabama).[15]

As stated earlier, the efficacy of the LIHTC program, and multifamily rental housing in general, is dependent on a property's ability to generate sufficient cash flows to support its operation. The presence of tax credit equity is critical since debt in rural Lower Mississippi Delta is difficult to support. Debt has an explicit cost that requires monthly payments. Equity from tax credits, which makes up a significant portion of the capital stack, does not require payment from rent. This allows for the property to operate at lower rents than it would if there were a larger portion of hard debt. Other parts of the capital stack may, but will not always, include subordinate debt from sources such as the HOME Investment Partnerships Program (HOME) and Community Development Block Grants (CDBG), which also do not require monthly payments.

However, even with minimal debt, covering operating expenses can be challenging. The problem is worse for market-rate (unsubsidized) properties that heavily rely on debt. In the rural Delta, this is especially true since market-rate rents do not differ significantly from subsidized rents.

*Economics of LIHTC Development – A Simple Illustration*

To examine the economic feasibility of developing LIHTC units in rural Lower Mississippi Delta, we will use a simple example of the costs and cash flows of a hypothetical property. To guide our calculations, we will use figures from three LIHTC investment summaries: one from a recent Freddie Mac deal and two that were obtained from Hudson Housing Capital.

The median size of a LIHTC project in rural Lower Mississippi Delta is 32 units, so we will use that for the unit count. The three LIHTC projects received an average of about 90% of financing from equity; debt was minimal. We assume a similar financing structure for our hypothetical property. In total, adjusted for unit count, we estimate that debt service would be roughly $22,800 with annual operating expense at about $140,600, for a total expense of $163,400.

---

[xiii] There is an issue of lack of financing which will be discussed later, but this is not inherently a supply problem since it stems from an overall lack of demand and doesn't directly impact production capacity.

The average net rent that is charged on these properties is about $494. Annually, this equates to roughly $189,800 in potential gross revenue, assuming full occupancy.

**Exhibit 10: Profit Analysis for a Hypothetical Rural Lower Mississippi Delta LIHTC Property**

| | |
|---|---|
| **Number of Units** | 32 |
| **Rent Amount** | $494 |
| **Rental Revenue** | 32 * $494 * 12 = $189,777 |
| **Debt Service** | ($22,789) |
| **Operating Expenses** | ($140,646) |
| **Total Expense** | ($163,434) |
| **Profit** | $189,777 - $163,434 = $26,343 |

Sources: Freddie Mac analysis of data from the Department of Housing and Urban Development (HUD), Hudson Housing Capital and data from a recent Freddie Mac LIHTC transaction

In this example, the income available after paying expenses and debt service for a 32-unit project is only $26,300. The sample properties did not always charge maximum allowable rents, which is not atypical of LIHTC projects across the country. In addition, developers commonly defer their fee for the project, which is used as a financing source that must be repaid over the 15-year compliance period. The developer fee varies considerably, but a rough assumption is about $2,300 per unit, which would equate to $74,000 for the project.

In addition, we assume an occupancy rate of 100%, which is unlikely on a consistent basis due to factors such as tenant turnover. Rental vacancy in this region for all multifamily units is higher than the national average. In 2017, 7.6% of rentals in rural Lower Mississippi Delta were vacant, compared with 6.1% for the nation. LIHTC vacancy is generally lower than the market average, both nationally and in the rural Lower Mississippi Delta region. From our outreach, we learned that high LIHTC vacancy in the rural Delta region is generally not a big issue. However, any occupancy rate below 100% will negatively affect the property's bottom line.

Because of all the considerations above, the true annual profit would be less than $26,300. The average development cost of the three sample properties (adjusted for unit count) is about $5.2 million. Even if annual profit were the full $26,300, it would still account for less than 1% of the development cost, which is extremely low and unsustainable for a property that has a high proportion of debt. In addition, the profit estimate above relies on simplifying assumptions; actual profit levels carry a great deal of uncertainty. Because of all these factors, we can determine that the key to success for projects like these is very low hard debt.[xiv] Generally, LIHTC properties in this region must rely primarily on tax credit equity, funding from other subsidy programs and sources of soft debt, such as HOME and CDBG funds mentioned earlier.

Although this example is based on a small sample size and relies on simplified assumptions, it does illustrate the basic economic dilemma of developing rental units in areas with low incomes. In general, there is no room for private equity investors to make a return on such a transaction. Low return on investment would preclude this type of development. This example underscores why LIHTC is so valuable.

[xiv] From our experience, LIHTC deals in rural areas will typically receive less than 20% of funding from hard debt.

### *Market Rate vs. LIHTC Rents*

As stated above, median gross rent (including utilities) in rural Lower Mississippi Delta is only $578, which is substantially lower than that of the nation and all rural areas. In the example above, the gross rent would be the net rent of $494 plus the utilities that tenants pay which is $154 (based on Department of Housing and Urban Development (HUD) estimates).

Therefore, the gross rent is $648, which is actually a little bit higher than market rate. However, it's important to remember that this is based on a very small sample and the properties studied were new construction, which naturally commands higher rents.

Nationally, maximum allowable rent under the LIHTC program will commonly be higher than median market-rate rent.[xv] However, in practice, market rate tends to be higher because LIHTC property operators will commonly charge below (sometimes far below) the maximum allowable. For our sample properties, effective rents were less than the maximum allowable by about 9.9%.

The actual amount below the maximum allowable that is ultimately charged varies widely. On an aggregate level, we can examine allowable rents by region to see how market rate compares. We find that the disparity between market-rate rents and maximum allowable rents for LIHTC is unusually large in rural Lower Mississippi Delta. Depending on the method used[xvi], the ratio of market-rate rent to maximum allowable rent is between 74% and 88%. The corresponding rate in the nation is between 91% and 94%.[16]

Part of the reason for this is that LIHTC incomes are calculated on an MSA/county level. Both urban and rural areas are included in this calculation, and as mentioned earlier, rural incomes are generally lower. If LIHTC used only rural income for projects in rural areas, then the maximum allowable LIHTC amount would be lower and thus the disparity between this and market-rate rents would be smaller.

Market-rate rent is comparatively low in rural Lower Mississippi Delta, and as a result, LIHTC operators in this region may need to lower rents by more than elsewhere, which cuts into profit margins.

### *LIHTC Properties Rely on Additional Subsidies*

Even with LIHTC as a part of the financing, projects often require additional capital that does not demand high returns. We can see evidence of this from examining LIHTC properties that are supported by other housing programs. Our research indicates that at least 60.7% of all LIHTC properties in rural Lower Mississippi Delta are supported by an additional federal assistance program. The most prevalent supporting programs are the HUD Section 8 and HOME programs, and the USDA Section 515 and 538 Rural Housing Service programs (commonly known as RHS 515 and RHS 538).

---

[xv] This is based on using median rent as reported by the American Community Survey. When examining rent from most other sources, maximum allowable rent is generally a little bit lower.
[xvi] HUD does not release AMI and LIHTC rents for the rural Lower Mississippi Delta region, or even for census tracts, so we needed to make estimations on the data that they do make available.

**Exhibit 11: LIHTC Properties Supported by Other Housing Assistance Programs**

| Subsidy/Guarantee Program | Number of LIHTC Properties Supported | Percentage of LIHTC Properties Supported |
|---|---|---|
| **Project-Based Section 8** | 79 | 8.9% |
| **HOME** | 126 | 14.2% |
| **RHS 515** | 365 | 41.1% |
| **RHS 538** | 22 | 2.5% |
| **Combined** | 540 | 60.7% |

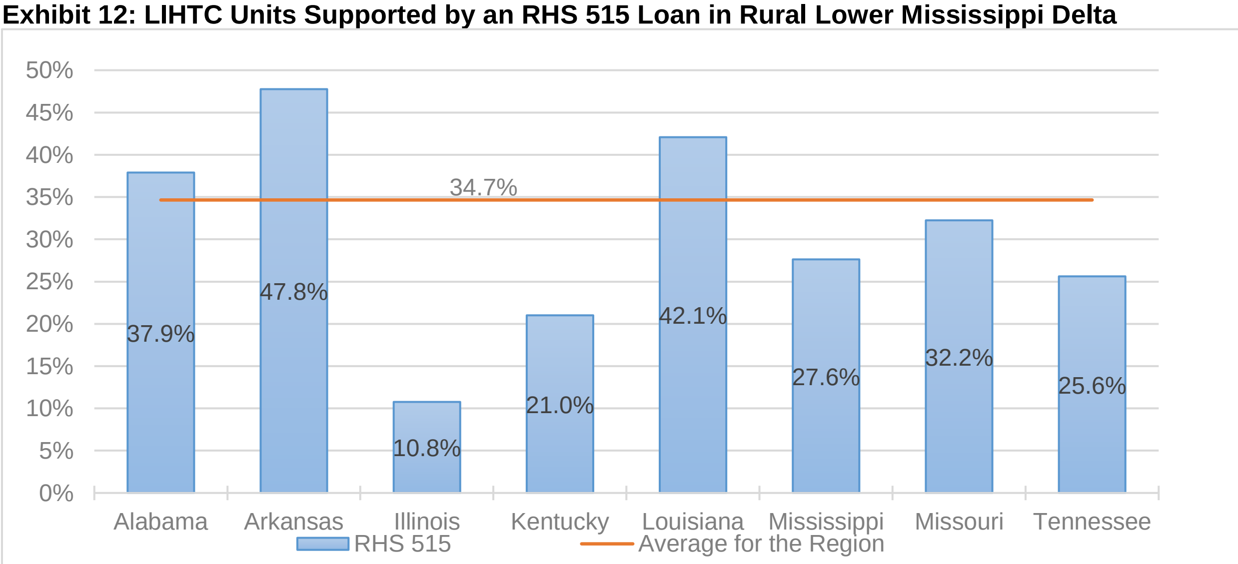
Source: Freddie Mac Tabulations of the National Housing Preservation Database. The figures in the table could be higher if there are subsidy programs used in the region that are not captured by the Preservation Database.

RHS 515, which is administered by the U.S. Department of Agriculture, is one of the most popular housing subsidies in rural areas and is the most popular program in rural Lower Mississippi Delta by property count. Specifically, 1,115 multifamily properties and 32,560 units in this region are supported by RHS 515.

The RHS 515 program grants loans at an effective interest rate of 1% that amortize over 50 years, thereby reducing the cash flows required to cover mortgage payments. In addition, tenants may benefit from the RHS Rental Assistance subsidy, which ensures that rent payments are capped at 30% of tenants' income.[17] This rental assistance is particularly important in allowing a property to generate enough income to stay in operation while charging affordable rents to tenants. In 2017, the average income of a household receiving RHS Rental Assistance nationally was only $10,897.[18]

RHS 515 is also the most common supporting subsidy program when examining the market on a unit level. Approximately 34.7% of LIHTC units in the rural Delta are supported by RHS 515, which compares with 5.3% nationally and 25.7% in rural markets.[10] There is a considerable amount of variation by state, as shown in Exhibit 12 below. The Arkansas and Louisiana portions of rural Lower Mississippi Delta have a particularly high percentage of RHS 515, whereas the supply is relatively low in Illinois and Kentucky.

**Exhibit 12: LIHTC Units Supported by an RHS 515 Loan in Rural Lower Mississippi Delta**




Source: Freddie Mac Tabulations of the National Housing Preservation Database

According to a report by the Housing Assistance Council (HAC), a significant number of RHS 515 loans are expected to mature in the coming decades.[19] This could adversely affect the affordability of rental housing in rural areas, including rural Lower Mississippi Delta. Loan maturation is problematic because when loan terms end, property owners are no longer obligated to keep the units affordable and tenants lose access to RHS Rental Assistance. Nationally, HAC predicts that 1,075 properties supporting 27,272 units will mature in the next ten years. This could put additional stress on the region's rental market and disproportionately affect low-income tenants in properties supported by LIHTC.

### *LIHTC Properties in Rural Lower Mississippi Delta Earn Comparatively Lower Prices Per Credit*

The price of tax credits across the nation has fallen quite considerably in the last three years. Tax credits were valued at about $1.05 on the dollar in 2016, but valuations dropped sharply following the presidential election. Most industry spectators attributed this decline to the anticipated reduction in the corporate tax rate which would devalue credits by reducing the depreciation expenses that credit investors could deduct on their taxes. In 2018, credits averaged $0.92 – a drop of over 12% from 2016.[20]

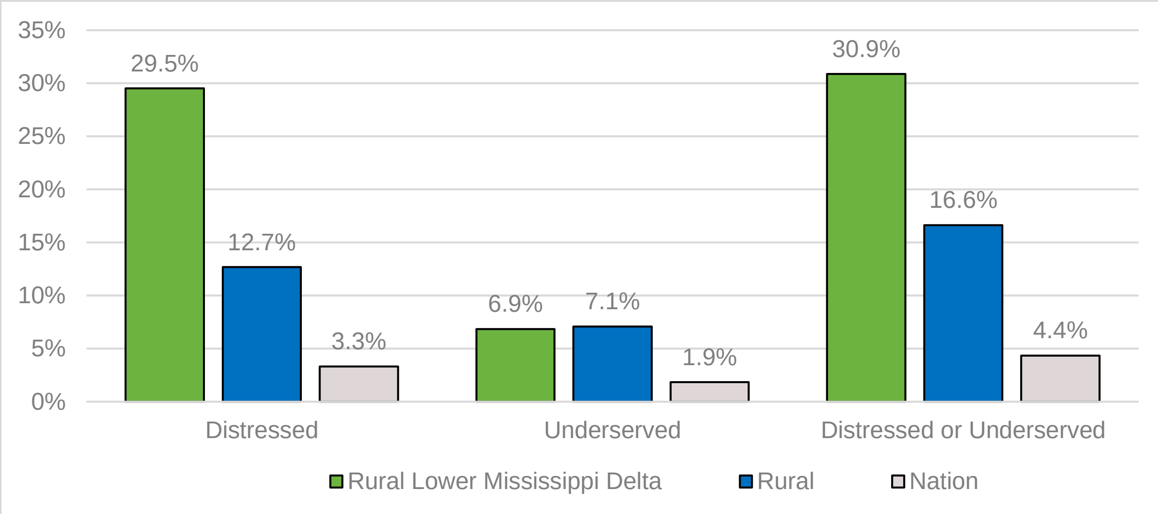
The declining value of tax credits is felt acutely in rural Lower Mississippi Delta where reliance on tax credits is more pronounced than most other areas in the nation. Based on our outreach to industry experts and our own investment activity in rural Lower Mississippi Delta, credits in this region average about $0.89 on the dollar. The price of credits is directly proportional to the amount that a developer is able to raise for construction or rehabilitation costs associated with a project. Lower credit pricing is therefore synonymous with less equity proceeds, which can lead to a shortfall of funding for the project.

Investing decisions for LIHTC is largely driven by the Community Reinvestment Act (CRA). Banks with CRA requirements account for about 85% of LIHTC equity investment and CRA demand drives up the price of credits.[21] In general, banks earn CRA credits by investing in the communities in which they take deposits. One common way of gaining CRA credits is by LIHTC equity investment.[22]

We learned during our outreach that CRA demand in rural Lower Mississippi Delta is low. Few large financial institutions have high enough bank deposits to warrant high CRA participation in the region. There are many smaller banks, but many of them either do not have CRA obligations or they meet them in ways other than LIHTC investment. In federally declared disaster areas, national banks may receive consideration for CRA credit.[23] This often causes additional interest in the region from financial institutions during those periods, but we learned in our outreach that such interest typically has not persisted.

There are a great number of distressed and underserved communities in rural Lower Mississippi Delta that are eligible for CRA consideration. In total, 30.9% of census tracts in rural Lower Mississippi Delta are either distressed or underserved, which is over seven times higher than the national rate of 4.4%. Despite the prevalence of communities eligible for consideration, CRA-driven demand remains low in the region.

**Exhibit 13: Distressed and Underserved Prevalence by Region (by Percentage of All Tracts)**




Source: Freddie Mac Tabulations of data from the Federal Financial Institutions Examination Council

### *Additional Difficulties in Developing LIHTC Projects and General Affordable Housing*[24]

In addition to the challenges outlined above, there are numerous other difficulties faced by the LIHTC program in this region, some of which are not common in other areas of the country.

Many areas throughout the Lower Mississippi Delta region are susceptible to flooding and thus require special construction and maintenance. Insurance costs can be high and proprietary construction techniques are needed in some cases. For example, after Hurricane Katrina, some projects were built using insulated concrete forms as a way to hold up against future storms.[25] As a result of these considerations, investors may be more cautious about devoting substantial capital into such projects, and housing units can be more difficult to maintain.

The rural Delta has historically not had an abundant supply of high-quality affordable housing units. This has had many causes, but the end result is plenty of examples of poorly constructed or maintained properties. In some cases, this can dissuade current residents from accepting affordable housing units near where they live and can sometimes impede affordable housing development. This is despite the fact that new LIHTC properties in the region are generally of higher quality than existing affordable housing.

Because relatively few LIHTC properties are built in the rural Lower Mississippi Delta, there is a relatively small pool of developers with experience providing affordable housing in this region. Similar to the rest of the nation, there is a shortage of qualified workers needed for the construction of new properties. On the operations side, there is a general shortage of experienced LIHTC property managers with a history of successful property management.

*Tangi Grove – An Example of LIHTC Filling a Great Need*

Tangi Grove is a 45-unit, scattered-site, rental development built using LIHTC equity syndicated by Hudson Housing Capital. The project is situated on 11 acres in Amite, Louisiana with 22 duplexes and one single-family building.

Before development, community leaders and elected officials were supportive of the project and there was little to no opposition from the local residents. The project was delivered in November of 2018 and was fully occupied within seven months, equating to a lease-up pace of just over six units per month.

The development includes 22 one-bedroom, one-bathroom units and 23 two-bedroom, one-bathroom units. Units are restricted to residents over 62 years old and cater to the needs of senior residents. The property contains seven handicapped units.

Tangi Grove features a community clubhouse with management and leasing offices, community room, walking trail and supportive services. The units are among the newest and highest quality in the area; they feature a full set of kitchen appliances, garbage disposal, carpet and laminate flooring, walk-in closets, ceiling fans, patios, and in-unit washer and dryer.

The project is located just north of the business district of Amite, a rural area about 75 miles northwest of New Orleans. Tangi Grove is part of the larger Grove subdivision which also includes Pine Grove, a family-oriented, 56-unit LIHTC community of single-family home style development. Amite is the parish seat of Tangipahoa Parish and has a population of just over 4,000. Hood Memorial Hospital is located just over a mile to the south of the project, a Winn-Dixie grocery store is about 2 miles south in Amite, and a Walmart Supercenter is located 3 miles southwest of the Tangi Grove. The quality and location of these amenities and services found in the surrounding area are a great benefit for seniors housing.

Of the 45 units at Tangi Grove, 41 are restricted to those who earn less than 60% AMI. The two-person AMI in the area for tax credit housing is $31,860. Four one-bedroom units receive rental assistance via the Permanent Supportive Housing Program run by the Louisiana Housing Corporation in the form of Section 8 vouchers. These units are restricted to households with disabled persons earning at or below 20% AMI. Rents at Tangi Grove are significantly lower than the maximum LIHTC allowable. Many of the residents are on fixed incomes and Tangi Grove is a safe and affordable housing option for them.

**Exhibit 14: Unit Mix and 60% LIHTC Rent**

| Unit Type | # of Units | Size S.F. | Rent | 2019 60% LIHTC Max |
|---|---|---|---|---|
| **1BR/1B** | 18 | 734 | $550 | $747 |
| **2BR/1B** | 23 | 987 | $650 | $895 |

Sources: Hudson Housing, Novogradac & Co.

The biggest challenge associated with the development of Tangi Grove was the requirement to build and operate an on-site sewage treatment facility, because the existing city sewage lines were not capable of handling the requirements of the new project. The plant also required a servitude agreement with an adjacent land owner to allow for the construction, installation and maintenance of the subsurface sewer line. The treatment plant at Tangi Grove was the sponsor’s first experience with this type of facility. However, it was successfully completed and has operated as expected.

Tangi Grove has been very beneficial to the lower income and disabled seniors it serves. Hudson Housing overcame several significant obstacles in the development of the project, and as a result senior tenants of Tangi Grove have high quality, safe and affordable homes that otherwise would not exist.

## Conclusion

Rural Lower Mississippi Delta has had a major cultural and economic influence on the entire nation but has also historically struggled to provide adequate and affordable housing. Multifamily rental housing has been especially tough due to structural demographic and economic drivers – including an aging population, low population density, a preference for homeownership and low regional income levels. These factors present difficulties for producing unsubsidized rental housing. Fortunately, LIHTC has stepped in to help bridge the gap between the need for housing and the natural economic viability of that housing.

This program is among the most common housing subsidy programs in the region and composes a very high percentage of all multifamily rental housing in the region. Although various factors hinder the ability of LIHTC to develop units in this region to some extent, the profound impact of the program on the multifamily housing market in rural Lower Mississippi Delta is clear. From our research, we learned that even though challenges exist, developers in the region are still able to produce a few dozen projects every year that serve lower-income families in rural Lower Mississippi Delta, as evidenced by analysis of LIHTC projects nationwide, and as exemplified by projects such as Tangi Grove.

**References**

[1] "Low-Income Housing Tax Credits." U.S. Department of Housing and Urban Development, 6 June 2018. Web. www.huduser.gov/portal/datasets/lihtc.html.

[2] Duty to Serve Regulation – 12 CFR 1282.1

[3] Freddie Mac Tabulations of 2017 5-Year American Community Survey

[4] Freddie Mac Tabulations of migration data from the Internal Revenue Service

[5] "Lower Mississippi Delta Overview." *Housing Assistance Council.* December 2002. Web. http://www.ruralhome.org/storage/documents/deltaoverview.pdf

[6] Chetty, Raj; Hendren, Nathaniel; Katz, Lawrence F. "The Effects of Exposure to Better Neighborhoods on Children: New Evidence from the Moving to Opportunity Experiment." Equality of Opportunity. Harvard University; NBER. August 2015. Web. http://www.equality-of-opportunity.org/images/mto_paper.pdf

[7] "Housing in the Lower Mississippi Delta." Housing Assistance Council. September 2013. Web. http://www.ruralhome.org/storage/documents/rpts_pubs/ts10_ms_delta.pdf

[8] Woods, Clyde. Development Arrested: The Blues and Plantation Power in the Mississippi Delta. New York City, Verso, 1998.

[9] Maestas, Nicole; Mullen, Kathleen J.; Powell David. "The Effect of Population Aging on Economic Growth, the Labor Force and Productivity." *National Bureau of Economic Research.* July 2016. Web. https://www.nber.org/papers/w22452.pdf

[10] Freddie Mac Tabulations of the National Housing Preservation Database

[11] "2018 Final Qualified Allocation Plan." Louisiana Housing Corporation. 23 April 2018. Web. https://www.novoco.com/sites/default/files/atoms/files/louisiana_2018_final_qap_042318.pdf

[12] "2017-2018 Qualified Allocation Plan." Mississippi Home Corporation. 2 December 2016. Web. https://www.novoco.com/sites/default/files/atoms/files/mississippi_2017-2018_final_qap_120216_0.pdf

[13] "Gulf Opportunity Zone Bond-IRC Section 1400N(a)." *Internal Revenue Service.* 1 May 2019. Web. https://www.irs.gov/tax-exempt-bonds/gulf-opportunity-zone-act-of-2005-pl-109-135

[14] "Gulf Opportunity Zone – States Are Allocating Federal Tax Incentives to Finance Low-Income Housing and a Wide Range of Private Facilities." *United States Government Accountability Office.* July 2008. Web. https://www.gao.gov/assets/280/278266.pdf

[15] Sullivan, Bob. "State of Credit: 2017." *Experian.* 24 October 2018. Web. https://www.experian.com/blogs/ask-experian/state-of-credit/

[16] Calculations are derived from data from both the FHFA and HUD

[17] "Rural Rental Housing Loans (Section 515)." U.S. Department of Housing and Urban Development, September 2002. Web. https://www.hud.gov/sites/documents/19565_515_RURALRENTAL.PDF

[18] "Results of the 2017 Multi-Family Housing Annual Fair Housing Occupancy Report." U.S. Department of Agriculture, 6 April 2018. Web. https://www.rd.usda.gov/files/RDUL-MFHannual.pdf

[19] "Maturing USDA Rural Rental Housing Loans: An Update." Housing Assistance Council. 29 August 2016. Web. http://www.ruralhome.org/storage/documents/policy-notes/rpn_maturing-mortgages-usda-2016.pdf

[20] "LIHTC Pricing Trends." Novogradac & Company LLP. Web. https://www.novoco.com/resource-centers/affordable-housing-tax-credits/data-tools/lihtc-pricing-trends

[21] "What do Higher LIHTC Prices Mean for Syndicators?" Cohn Reznick. 1 June 2014. Web. https://www.cohnreznick.com/insights/what-do-higher-lihtc-prices-mean-syndicators

[22] "Low-Income Housing Tax Credits: Affordable Housing Investment Opportunities for Banks." *Office of the Comptroller of the Currency.* April 2014. Web. https://www.occ.gov/topics/community-affairs/publications/insights/pub-insights-mar-2014.pdf

[23] "Designated Disaster Areas and Consideration Under the Community Reinvestment Act." *Office of the Comptroller of the Currency.* August 2018. Web. https://www.occ.gov/publications-and-resources/publications/community-affairs/community-developments-fact-sheets/pub-fact-sheet-desig-disaster-areas-cra-aug-2018.pdf

[24] All commentary in this section comes from our conversation with Michelle Whetten, VP & Market Leader from Enterprise Community Partners Gulf Coast, and from James Freeman, VP of Development at Standard Enterprises

[25] "R4 Report FY 2011." U.S. Department of Housing and Urban Development, Web. https://www.hud.gov/sites/documents/R4REPORT2011.PDF - Some additional information was provided by Michelle Whetten, VP & Market Leader from Enterprise Community Partners Gulf Coast

In addition to these explicit, in-line citations, we also received input from members of various organizations that specialize in rural housing. We are very grateful for their input as our research efforts could not have been possible without them. The organizations include:

- Hudson Housing Capital
- Enterprise Community Partners
- Mississippi Home Corporation
- Standard Enterprises
- Federal Reserve Bank of St. Louis