

Assessing financial losses from urban renewal in Linnentown

Research Report

Dr. Jerry Shannon, Dr. Richard Martin, and Aidan Hysjulien

This report was created at the request of the Athens-Clarke County mayor's office and developed in consultation with Mayor Kelly Girtz and members of the ACC Justice and Memory Project.

Executive summary

Context and purpose

Section 112 of the Federal Housing Act provided funds that allowed universities around the United States to use urban renewal funds to finance the expansion of their campuses. At the University of Georgia, the R-50 redevelopment created new university buildings and student housing, displacing residents to the west of the existing campus. Most residents of the Linnentown neighborhood, all of whom were Black, lost their properties through eminent domain at prices below those of their White neighbors. This study provides an estimate of the financial loss attributable to underpayment at the time of sale and lost appreciation had residents of Linnentown been able to remain in their homes.

Data and methods

Data for this study came from archival records for the R-50 project, census data on housing values and area demographics, inflation rates from the U.S. Bureau of Labor Statistics, and home sales data from the Athens-Clarke County tax assessor.

We create an estimate of underpayment using two approaches. In the first, we use recent home sales to estimate the current value of Linnentown properties and compare that to the amount Linnentown residents received, adjusted for appreciation. In the second estimate, we compare the amounts residents received to the prices received by White residents living outside Linnentown.

Lost appreciation is calculated based on the realized amount residents received and rates of appreciation for both the Linnentown area and the neighborhoods to which residents who stayed owners relocated. For homeowners who became renters, we calculate the realized price they received adjusted for inflation and compare that to the appreciated value had they not been displaced.

Results

In this analysis, we calculate financial loss for Linnentown property using these two figures:

- Loss from underpayment
 - Estimate 1: Based on recent home sales: **\$4,027,789**
 - Estimate 2: Based on fair prices across neighborhoods: **\$3,062,842**
- Loss from lower appreciation due to relocation: **\$994,586**

Our estimate of a fair price for Linnentown properties also shows that these owners received only 56% of the amount they would have received if their properties had valued similarly to those outside of Linnentown.

Limitations and future analysis needed

Our analysis is limited by missing data on several Linnentown properties, especially on relocation outcomes. It also focuses solely on financial losses based on property valuation. As a result, our estimate does not account for other losses experienced by residents such as effects on employment or education or the emotional trauma of forced displacement.

Future research can thus compliment and extend this baseline estimate. This work could draw from relevant work to determine financial compensation for emotional trauma or secondary effects on households due to the destruction of their neighborhood.

Summary

We use the first estimate of underpayment for our final calculation, as White homeowners may have also been underpaid for their properties during the R-50 redevelopment. This results in an estimated total financial loss of **\$5,022,375**.

As communities around the United States develop methods for calculating reparations for the effects of urban renewal or similar policies, our analysis provides one template for calculating financial loss.

1. Background

In the early 1960s, the city of Athens, Georgia and the University of Georgia collaborated on a large redevelopment of an area on Baxter Street just to the west of campus. This area, shown in Figure 1, included two neighborhoods, one primarily White community north of Baxter and the Linnentown neighborhood, primarily Black, south of Baxter. Using federal Urban Renewal funds, the city of Athens and the University System of Georgia purchased some homes and seized many others using eminent domain to expand the campus, creating student housing (Cresswell, Brumby, and Russell Halls), the West Campus Parking Deck, and several other buildings including the Special Collections Library that now houses records of this project. Archival records exist for 117 of these acquired properties, 54 of which were located in Linnentown. These properties listed 296 individuals, 171 of which lived in Linnentown.

Urban Renewal Project R50

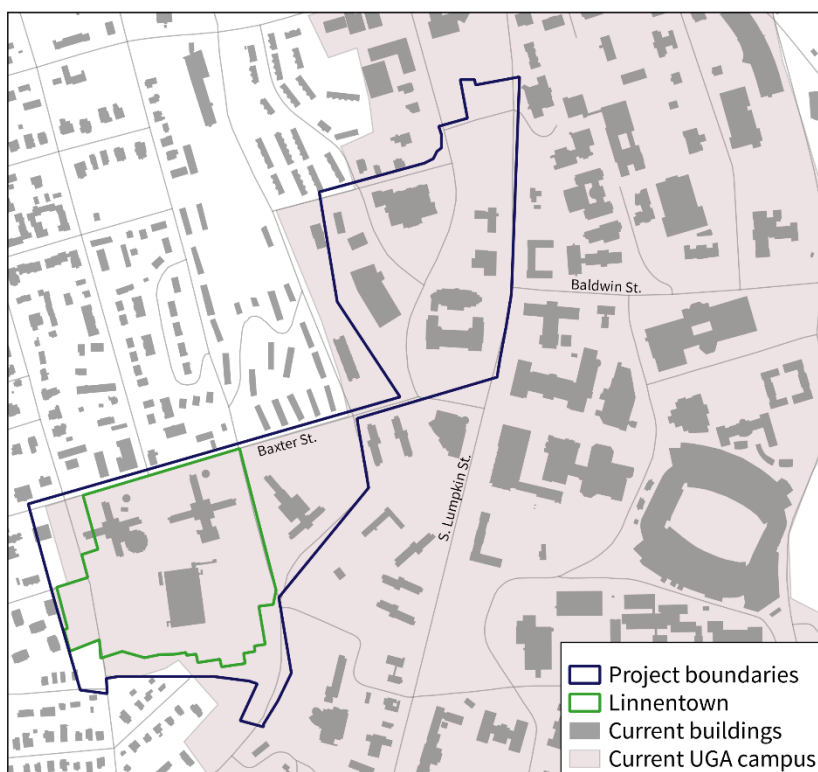


Figure 1: Project R50 and Linnentown boundaries with current buildings and UGA campus outline

Urban Renewal funds transformed city landscapes nationwide, and in multiple locations they were used to fund large housing projects, commercial centers, and interstate highways that demolished historically Black communities and displaced residents (Avila & Rose, 2009; Hock, 2013; Holliman, 2009). Under Section 112 of the Housing Act, universities could partner with city governments to make use of urban

renewal funds as part of a matching grant program. Records indicate that 120 colleges took advantage of this provision, including Columbia and the University of Pennsylvania (Baldwin, 2021, p. 31). In a 1964 article in *The Journal of Higher Education*, Kenneth H. Ashworth (1964) argued that universities had a valuable opportunity to acquire “blighted, dilapidated, deteriorating properties and slums” near their campuses using Urban Renewal funding for the purposes of expansion, and that any delay would be “the most disastrous decision a university can make” (p. 493).

While these properties were technically purchased by the state’s university system, administrators from the University of Georgia were actively involved in the creation of this project, sometimes using the same language of obsolescence and neighborhood decline. The university president, O.C. Aderhold, wrote to U.S. Senator Richard B. Russell in 1961 that this federal funding “would clear out the total slum area which now exists off Baxter Street,” referring specifically to the Linnentown neighborhood, shown in more detail in Figure 2. A letter from the university system to President Aderhold stated that if “a plan of cooperation could be worked out between the City of Athens and the institution [UGA], you might have an opportunity to effect some of your dreams.” In another letter to Senator Russell, Dean William Tate expressed that the university had “reason to be grateful to the people of Georgia and the United States for the building that they have made possible on this campus.” Lastly, a letter from President Aderhold to USG Chancellor Harmon W. Caldwell asking for the Regents’ approval of the project highlighted how this urban renewal project would “be of tremendous financial advantage to the University.”¹

During the course of this project, which lasted until 1966, Linnentown residents faced the condemnation of their homes, intimidation from construction crews, and forced removal through eminent domain judgments. As Christine Johnson, one former resident, remembered it, “At night at one or two o'clock in the morning, they would start the bulldozers, pushing, you could hear them. But my mother would always say ‘Just relax, they're not gonna hit this house.’” Residents had little recourse for resisting their forced displacement and experienced significant financial losses. Based on digitized housing records, over half of the Linnentown properties were owner-occupied (33 of 53, 62%), and properties were often appraised for values much lower than in the neighboring White community north of Baxter Street. Records also indicate that residents most often moved to other predominantly Black areas of town where appreciation rates may have remained below that of the highly prized land close to the university campus.

¹ Quotes taken from correspondence held in the Hargrett Rare Book & Manuscript Library at UGA



Figure 2: Linnentown parcels and buildings

Relying on archival records from this redevelopment and census records, this research quantifies the extent of financial loss for former Linnentown residents. We do this by answering the following research questions:

1. Based on current sales prices, how much would Linnentown properties be worth today, and how does that compare to realized prices, adjusting for appreciation?
2. How did the realized home prices that Linnentown homeowners received compare to the prices received by owners of R-50 homes outside Linnentown?
3. What was the financial loss due to lower rates of appreciation or lost appreciation for displaced Linnentown homeowners?

Questions 1 and 2 are two ways of measuring underpayment, using two different standards of comparison. In the first, we estimate current home values based on recent sales as the comparison. In the second, we use the prices received by White homeowners displaced by the R-50 project. For comparability, we adjust the realized prices for appreciation in both cases. The third question estimates additional losses due to lower rates of appreciation in the neighborhoods to which Linnentown homeowners relocated or to lost appreciation for those who became renters.

Our research informs ongoing discussions between the Athens-Clarke County local government and former Linnentown residents and local activists about how best to provide redress for the damages caused by this project. In doing so, we also provide a model for other communities seeking to understand and address the historical legacies of Urban Renewal.

2. Data and methods

To answer our research questions, we drew from several sources. Archival data on the R-50 redevelopment is available through the Hargrett Library at the University of Georgia, including area maps (such as Figure 3) and detailed records for many acquired properties. Conversations with former Linnentown residents provided valuable context for this information, clarifying matters such as the neighborhood boundary and property ownership.



Figure 3: Map of the R50 redevelopment held by the UGA archives

We relied on two additional resources for information on property appreciation. The first is a listing of home sales from 1990 through 2020 provided by the Athens-Clarke County Tax Assessor's Office. The second was decennial census data on home values by census tract in 1970 and 1990, the period prior to the sales records.

For our first research question, we use current sales prices in the Linnentown area and recorded property characteristics to estimate the current value of Linnentown properties. For the second estimate, we used OLS regression to identify the factors associated with the sales prices of properties in the White neighborhood outside Linnentown. We then applied the coefficients from this model to the properties inside Linnentown to estimate an expected price if both neighborhoods had been treated equally. We also contextualize the disparity in the realized and expected prices by analyzing data for home values across neighborhoods in Athens in 1970. For question three, we use census and sales data to calculate appreciation rates across Athens to identify differences in these rates for displaced homeowners. We also estimate lost appreciation for homeowners who became renters after being displaced, comparing the estimated appreciated value of their homes to the realized price they received adjusted for inflation. A full description of our methodology is available in Appendix A.

3. Findings

3.1 Sale characteristics

A descriptive comparison of parcel sales inside and outside Linnentown is shown in Table 1. These figures are broken down by two categories: whether the parcel was inside or outside Linnentown's boundaries and whether the property was acquired via sale or eminent domain/condemnation. Three condemned parcels in Linnentown were successfully appealed for significantly higher prices, and these are listed separately.

Parcels outside Linnentown were generally larger than those inside the neighborhood. The median parcel size outside the neighborhood was 13,350 while the size inside Linnentown was 9,581 square feet. The mean number of rooms for structures outside the neighborhood was 7.13 while inside Linnentown this figure was 4.69. Both figures varied significantly. For example, the interquartile range for parcel area, meaning the range from the 25th to 75th percentile of observations, was 15,900 square feet outside Linnentown and 3,680 inside Linnentown. For room count, the standard deviation—or the average distance of any observation from the mean—was 4.1 rooms outside Linnentown and 4.69 rooms inside Linnentown. These data show much higher rates for Linnentown for both condemnation (80% in Linnentown, 56% outside) and substandard ratings of structures (71% inside Linnentown, 55% outside).

Location	Sales type	Parcel Area		Total parcels	# of rooms		# of buildings by rated condition	
		Median	IQR		Mean	SD	Standard	Substandard
Outside Linnentown	Condemned	11,680	6,978	23	7.29	3.90	8	9
	Sold	15,713	17,609	18	6.93	4.45	4	6
	All	13,350	15,900	41	7.13	4.10	12	15
Inside Linnentown	Condemned	9,962	3,795	28	4.81	4.00	9	16
	Condemned/appealed	9,558	761	3	4.00	0.00	0	1
	Sold	9,484	6,213	8	4.5	2.20	1	7
	All	9,581	3,680	39	4.69	1.69	10	24

Location	Sales type	Tenant occupied	Parcels with >1 structure	Sales price		Price per sq. ft of land	
				Median	IQR	Median	IQR
Outside Linnentown	Condemned	5	2	\$11,500	\$10,275	\$0.91	\$1.00
	Sold	3	1	\$12,500	\$12,250	\$0.73	\$0.48
	All	8	3	\$11,500	\$9,750	\$0.78	\$0.64
Inside Linnentown	Condemned	5	0	\$6,025	\$4,575	\$0.62	\$0.48
	Condemned/appealed	1	0	\$7,000	\$875	\$0.73	\$0.17
	Sold	5	2	\$3,850	\$3,075	\$0.34	\$0.11
	All	11	2	\$5,600	\$4,325	\$0.56	\$0.45

Table 1: Summary of parcel transactions in the R-50 redevelopment by neighborhood and method of property acquisition

	Dependent variable: Purchase price					
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Rated condition						
All standard	1240					
	(3952.224)					
>1 substandard	Reference					
Transaction type						
Sold		1312.742				
		(2979.428)				
Condemned		Reference				
Rental status						
Tenants listed			5731.061			
			(3625.996)			
Owner only			Reference			
# of listed rooms				1,721.243***		1,496.969***
				(282.874)		(276.766)
Area (sq ft)					0.362***	0.214**
					(0.107)	(0.086)
Constant	15,043.330***	13,010.870***	12,468.940***	3341.614	7,218.783***	1141.553
	(2420.233)	(1974.137)	(1601.697)	(2316.505)	(2289.585)	(2318.838)
Observations	24	41	41	32	41	32
R²	0.004	0.005	0.06	0.552	0.227	0.63
Adjusted R²	-0.041	-0.021	0.036	0.537	0.207	0.605
Residual Std. Error	9,373.523 (df = 22)	9,467.628 (df = 39)	9,201.050 (df = 39)	6,459.821 (df = 30)	8,345.299 (df = 39)	5,971.137 (df = 29)
F Statistic	0.098 (df = 1; 22)	0.194 (df = 1; 39)	2.498 (df = 1; 39)	37.025*** (df = 1; 30)	11.445*** (df = 1; 39)	24.722*** (df = 2; 29)

Note: **p<0.01 ***p<0.005

Table 2: Univariate and multivariate models for purchase price for parcels outside Linnentown

The price paid for parcels also varied notably by neighborhood. For total sales price, parcels outside Linnentown had a median price 205% higher than those inside the neighborhood, \$11,500 compared to \$5,600. When that price is adjusted for parcel area, the gap is 139%, \$0.78 per square foot of land outside Linnentown and \$0.56 inside. Prices remain higher outside Linnentown even when comparing condemned or sold properties only across neighborhoods. In both neighborhoods, sold properties received prices below those that were condemned when calculated by square foot of parcel area.

3.2 Calculating financial loss from underpayment

We use two methods to evaluate underpayment. In the first, we compare the realized price paid to Linnentown homeowners, adjusted for appreciation, with an estimated current value based on recent home sales. To do so, we use 59 recorded fair market sales in tract 2100 for the years 2019 and 2020. We create an OLS regression model for those sales with the price as the dependent variable and both parcel area and heated square feet of structure as independent variables. The results of the model are shown in Table 5.

In this model, each square foot of heated area in a structure adds \$239.43 to the value of a property and each square foot of parcel area adds \$5.16. The model intercept adjusts the price downward by \$41,279.28. This model has a very high R^2 value of 0.872, and both variables of interest are statistically significant.

Heated area	239.429***
	(20.727)
Parcel area	5.1622*
	(2.705)
Constant	-41279.28
	(28881.55)
Observations	59
R^2	0.872
Adjusted R^2	0.868
Residual Std. Error	97,392.620 (df = 56)
F Statistic	191.174*** (df = 2; 56)
*p<0.05 **p<0.01 ***p<0.001	

Table 5: Results of OLS regression model for recent home sales in tract 2100. The dependent variable is sales price.

We can apply this model to the Linnentown records using the same two variables. The records provide a parcel area for each property, but we do not have detailed records on structure size. To develop an estimate of structure size, we began with the home owned by Ms. Geneva Johnson Blasinggame, currently at 1550 E. Broad Street, which was moved to that location when her family was displaced from Linnentown. Current property records list its size at 660 heated square feet, but residents have indicated that it was smaller than the average home in the neighborhood, part of the reason why it was relocated. A 1958 report on new housing prepared by the Bureau of Labor Statistics lists the median floor area of new homes in the South region in 1956 as approximately 1,200 square feet (U.S. Department of Labor, 1958, p. 47). Based on these two factors, we use a home size of 800 square feet for all properties, assuming that sizes varied around this midpoint.

For example, Mr. John Henry Dillard’s home at 187 Lyndon Row had a parcel area of 9,940 square feet. Using the model values above and assuming his home was 800 square feet in size, its current estimated value would be

$$(800 * 239.429) + (9,940 * 5.1622) - 41,279.28 = \$201,576.19^2$$

Data on current estimated value for each Linnentown property is provided in Appendix B. We estimate that the cumulative value of all Linnentown properties today would be \$7,950,585. Comparing this figure to realized prices, adjusting for appreciation, this method estimates underpayment to residents at \$4,027,789.

In our second estimate, we compare the realized value Linnentown homeowners received for their properties with a “fair price” based on the amounts received by owners outside of Linnentown. We use OLS models to fit a model for the purchase prices of the parcels outside Linnentown using multiple variables, and the results of these models are shown in Table 2. Several variables were not significant in univariate models: the rated condition of structures on the property, the type of transaction, and whether or not renters were listed for the property. The model fit was very low (R^2 between 0.04 and 0.06) for each of these variables. As a result, they were not included in our full model, as they did not have a significant impact on the price received by the property owner.

² The amount for Mr. Dillard is slightly lower (difference of \$0.17) than that shown in the Appendix B. This difference is due to a precise model coefficient, which is rounded here for ease of reference.

Two variables were significant: the number of listed rooms (which may act as a proxy for structure size) and the area of the parcel itself. The number of listed rooms alone had an R^2 of 0.552, meaning that it explained 55% of the variance in purchase price in the 32 parcels for which rooms were counted (model 4). Model 6, which combines this variable with parcel area, had a higher R^2 (0.63), a high figure for a model with only 32 observations. In model 6, each additional listed room adds \$1,497 to the value of a parcel, while each additional square foot of parcel area adds \$0.21. The intercept value of \$1,142 is a baseline value for all parcels.

We can use this model to estimate the prices of Linnentown properties had they been priced in the same manner as properties outside the neighborhood. For example, 580 S. Finley was owned by Ms. Katherine Decker. A survey of the property listed three rooms, and the parcel area was 9,920 square feet. Applying the values from model 6, a fair price for the property would have been:

$$(3 * \$1,497) + (9,920 * \$0.21) + \$1,142 = \$7,716$$

According to the archived removal records, Ms. Decker received only \$2,500 for the property, an amount \$5,216 below the estimated fair price.

When we sum the realized price received for owners of all Linnentown properties ($n=39$), the total is \$214,830. If we sum the estimated fair values for the same properties, the total is \$384,092. We thus calculate an underpayment of \$169,262 between realized prices for Linnentown homeowners and the fair prices predicted by our model. Put another way, Linnentown owners received only 56% of the value they might have expected for their properties had pricing been fair across neighborhoods.

To contextualize the gap between neighborhoods, we acquired data from the 1970 census showing median home values and racial classification of residents by census tract. In Figure 4, these variables are mapped, with a red triangle showing the location of Linnentown. For the three tracts with the highest percentage of residents classified as White (tracts 5, 7, and 10), the median home value was \$22,083. In the three tracts in this area with the lowest percentage of residents classified as White (tracts 2, 3, and 9), the average median home value was \$8,750 in 1970, or only 40% of the value in White neighborhoods. While we are unable to adjust for property or house size in the 1970 data, the price gap of 56% in Linnentown was similar to this figure, showing that it reflected a broader racialized disparity in home values.

To compare this underpayment figure with our first estimate, we adjust this price gap for appreciation in the area between 1970 and 2020. Using methods outlined in the next section, we identify an appreciation rate of 1,826.9% in tract 2100 (2010 census boundaries), the residential area closest to where Linnentown

once stood. At this rate, the realized price Linnentown homeowners received would have appreciated to \$3,922,796. With a fair price, the appreciated value would have been \$6,985,638. Comparing the two figures shows a net loss of \$3,062,842.

In this section, we estimate the loss from underpayment based on two methods: (1) comparison with recent home sales (\$4,027,789) or (2) comparison with property prices given outside of Linnentown (\$3,062,842). We prefer the first of these methods. The second does not account for potential underpayment to residents outside of Linnentown due to eminent domain judgments or forced sales, nor does it account for a gap in our estimated appreciation between 1964, the point by which most homes were sold, and 1970, when our data on home prices begins.

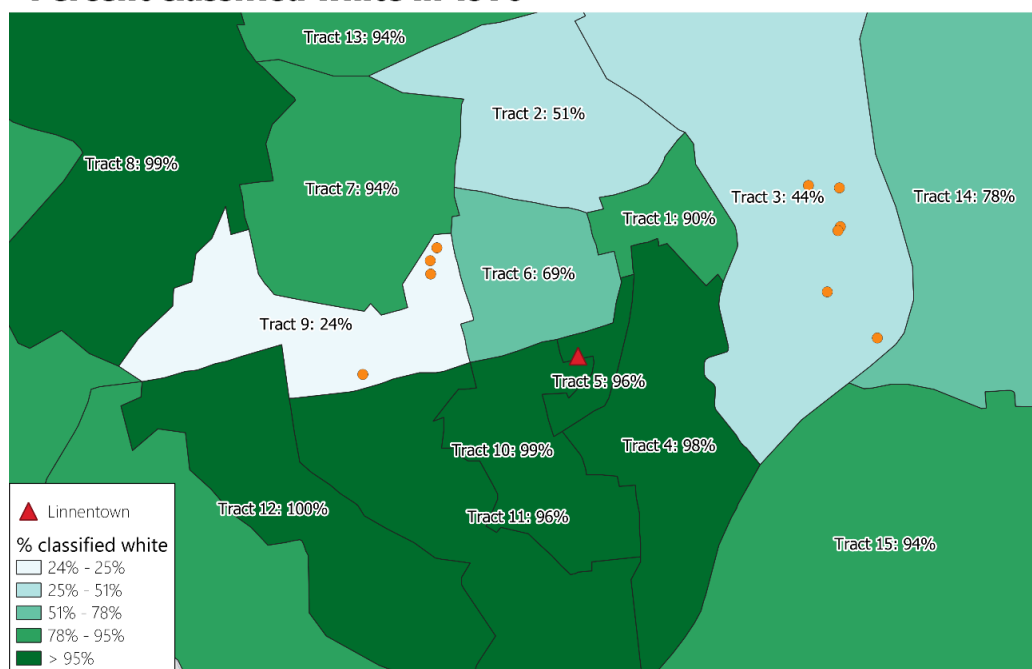
3.3 Calculating financial loss from appreciation

In addition to the loss from underpayment, Linnentown homeowners also potentially faced financial loss from lower appreciation rates in their new neighborhoods compared to appreciation they would have received if they had not been displaced. To calculate this loss, we use the realized price homeowners received and calculate the appreciation this amount would have had both in Linnentown and in residents' new neighborhoods.

The appreciation rate in each census tract—using boundaries from 2010—is shown in Figure 5. The area where Linnentown once stood is now part of tract 402, which is primarily non-residential properties related to the University of Georgia. Appreciation rates in that tract are much lower, due both to the unique nature of university properties and missing data for most of the area in 1970 (see the blank value in housing values in Figure 4 compared to the 2010 boundaries in Figure 5). As a result, for this analysis we use the appreciation rate for neighboring tract 2100 (1,826%), which includes residential areas neighboring Linnentown. The parcels in that area are of similar size to those in the R-50 redevelopment and share the same proximity to the University.

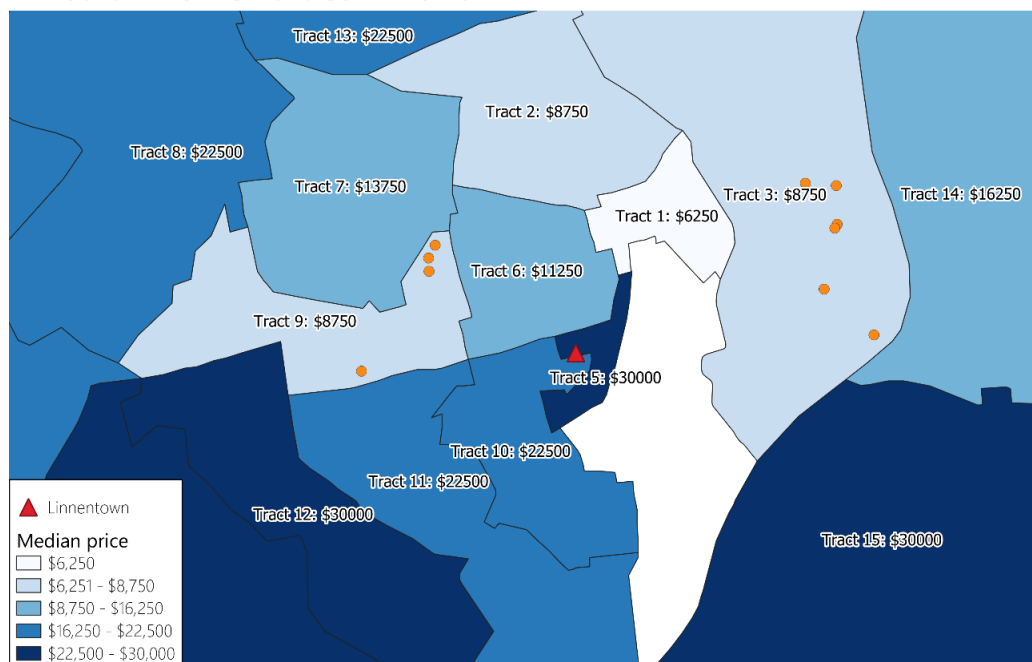
Relocation records usually include the tenure status of relocated residents as well as their new address. Table 3 shows the breakdown for property owners inside and outside Linnentown. We geocoded the relocation addresses given for Linnentown residents in the removal records, and twenty of these near downtown Athens are shown in Figure 5. Among the 11 owners who purchased single-family homes within the city (shown in orange), four moved to tract 900 (primarily near Hancock Ave), six moved to tract 30200 in East Athens, and one moved to tract 150400 (southeast Athens outside the current 10 Loop).

Percent classified white in 1970



Data: 1970 decennial census

Median home values in 1970



Data: 1970 decennial census

Figure 4: Percentage classified white and median home values in the 1970 census. The map boundaries are 1970 census tracts

Property appreciation, 1970-2020

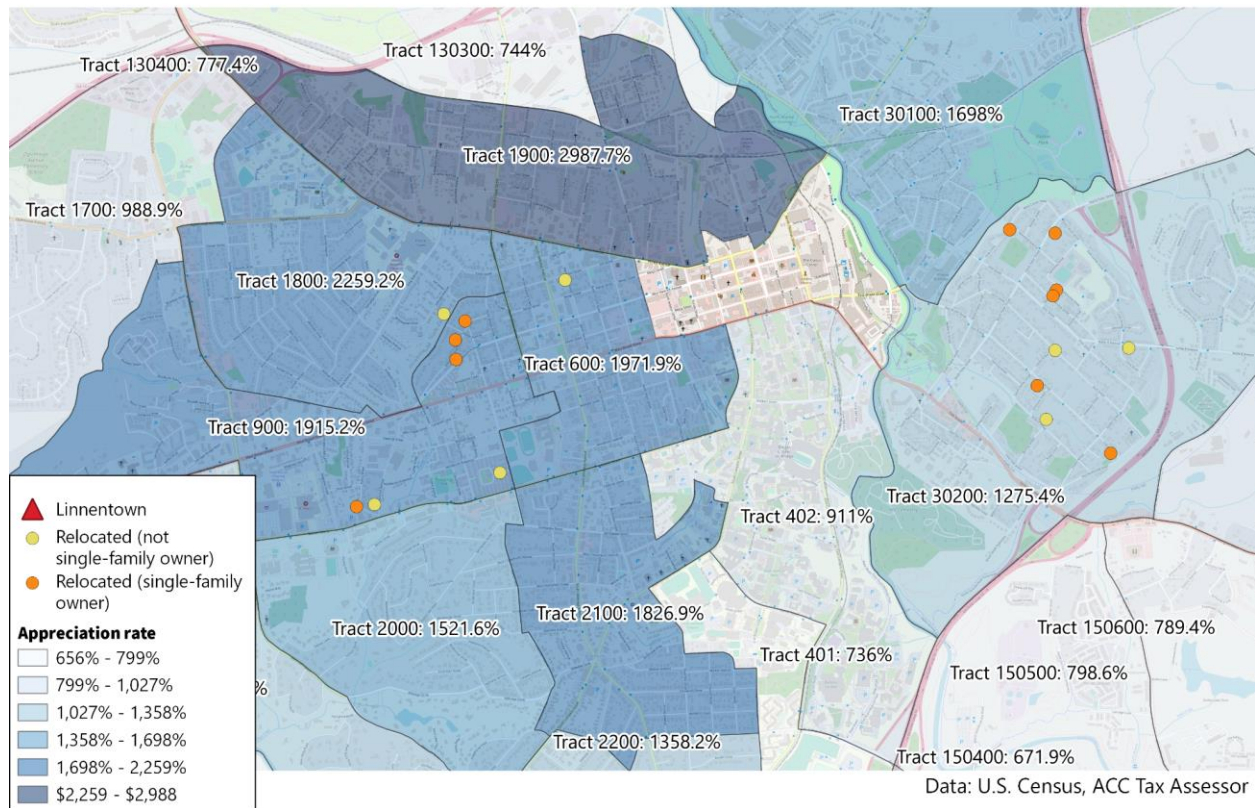


Figure 5: Appreciation rates by 2010 census tracts from 1970 through 2020.

New tenure	Inside Linnentown	Outside Linnentown
Sales	13	6
Rental	4	3
Public housing	0	1
221 Mortgage (multifamily)	1	0
Not listed	17	25
Total	35	35

Table 3: New tenure status for listed property owners inside and outside Linnentown. Note: relocation records do not provide sales prices for two Linnentown properties.

We compare the appreciation rates of owners' new census tracts with what it would have been for Linnentown (tract 2100). For example, Mr. John Henry Dillard lived at 187 Lyndon Row and received \$6,250 for that property in an eminent domain judgment. At a rate of appreciation of 1,826%, a property of that value would be worth \$114,125 in 2020. Mr. Dillard purchased a new property in tract 30200 in East Athens. If that property were worth the same price he received (\$6,250) and appreciated at the rate

calculated for that tract (1,275%), it would be worth \$79,711 in 2020. Thus, we calculate \$34,414 in lost appreciation in his case.

Some property owners gained value in appreciation after relocation, since the rate for tract 900 (1,915%), where four residents relocated, is higher than that of Linnentown. Still, when we sum the net gain or loss for the owners we can track, we find a total lost appreciation of \$254,090, or an average of \$23,099 per owner.

Other categories of owners also were affected by lost appreciation. As Table 3 shows, 17 owners had no relocation addresses given, and two relocated to new homes outside of Athens. Of the 18 homeowners for whom we have relocation information, 13 (72%) purchased new single-family homes. If we assume the same rate for the 17 owners with no relocation information, 12 additional residents would have purchased new homes. Combining this number with the two homeowners who moved outside Athens, we estimate additional lost appreciation in this way:

$$14 * \$23,099 = \$323,386$$

Lastly, homeowners who became renters (n=4 in the removal records) would have not benefited at all from appreciation. Collectively, these four owners received \$22,890 for their properties. It is difficult to determine exactly how they used these funds, but we might conservatively assume that it was saved and increased at the same rate as inflation. According to the Bureau of Labor Statistics, \$1 in 1963 would be worth \$9.11 in 2021. At that rate, this amount would have grown to \$208,528. Alternatively, if that same amount had appreciated by 1,826% in Linnentown, it would total \$417,971 today, a gap of \$209,443 or \$52,139 per owner. If an additional four owners in the “Not Listed” group also became renters after relocation, that total amount would double to \$417,110.

In total, we estimate the amount of lost appreciation for Linnentown residents to be as follows:

Lost appreciation for owners with known relocation addresses	\$254,090
Lost appreciation for owners outside Athens or w/missing records	\$323,386
Lost appreciation for owners who became renters	\$417,110
Estimated total lost appreciation	\$994,586

Table 4: Estimate of financial impact of lost appreciation

4. Final summary and limitations

In this analysis, we calculate financial loss for Linnentown property using these two figures

- Loss from underpayment: **\$4,027,789**
- Loss from lower appreciation: **\$994,586**
- Combined losses: **\$5,022,375**

There are several limitations to our analysis. Archival records are not complete, and we lack full data on variables such as room counts, structure size, or relocation outcomes which would allow for a more robust estimate. We have interpolated a value for structure size based on related data, but this introduces uncertainty. While we have data on 39 parcels, approximately nine more had already been acquired for redevelopment prior to official records being kept. It is also now nearly 60 years since this project took place, and it would not be possible to track the housing tenure of all former residents since that time. As a result, our counterfactual scenarios are broad in nature. Residents stayed in Linnentown for the entire 60 years after redevelopment occurred, or they did not. We assume minimal changes to parcel boundaries or building characteristics. Lastly, this forced relocation had a deep and lasting impact on Linnentown residents, as accounts from former residents make clear. Assessing losses in property value does not account for the effects of emotional trauma or the effect of relocation on employment or educational trajectories. We recommend that further analysis be done by those with expertise in such issues to estimate financial compensation appropriate to the harm done.

Athens is not alone in studying its history of racialized dispossession. Multiple communities around the United States have been studying these issues. As the city considers potential action to redress these past injustices, conversation with that broader community of cities can help inform program and policy responses.

This analysis is one of only a few, to our knowledge, that quantifies the financial losses experienced by those displaced by urban renewal. As such, it can serve as a template for other communities studying this history. Our analysis does not include all losses experienced by Linnentown residents, but we hope that this report provides the stakeholders involved with evidence to inform conversations about the scale and nature of reparations.

5. References

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Appendix A: Data and methods

Data sources

Our primary data for this project come from records held in the Hargrett Rare Book and Manuscript Library at UGA. This archive contains detailed records for 117 properties redeveloped through this project, including property inspections, legal proceedings, and relocation information. These data were digitized into a spreadsheet format by students in the Community GIS class at UGA taught by Dr. Jerry Shannon in Spring 2020 and were rechecked for accuracy for this analysis. These records were aligned with a map of the redevelopment (Figure 3) to determine the owner of each parcel and other relevant variables.

For 23 parcels, there were removal records per parcel. This was due either to status as a rental property (separate records for owners and tenants) and/or when a single parcel held multiple structures. When this was the case, we collapsed these multiple records to a single observation, noting both the owner and occupant names and summing the number of rooms for all structures. In a few cases, there was conflicting information on room numbers within a given record, in which case we used the number listed on the Family Survey form. We created dummy variables for property ratings, identifying whether at least one structure on the parcel was rated standard or substandard, as some included both.

After removal records were combined with the project map data and duplicate parcels were condensed, our full dataset had records for 122 parcels. Some properties lacked sales records, primarily those that had been already acquired by the university and/or city prior to the official project. As a result, our analytic dataset has the 80 records with a listed price for either a property sale or eminent domain judgment.

The university archives also contain multiple maps relevant to this research, including street grids and maps of the redevelopment project (such as the one shown in Figure 3). Students in the Spring 2020 Community GIS class georeferenced the project maps based on the existing street grid and aerial photos from the period. They then digitized the parcel boundaries and building outlines from the map shown in Figure 3, including resident and owner information from both this map and the archival removal records.

The boundaries of the Linnentown neighborhood were determined both by conversation with former residents and the racial classification given in the archival records for each property. Properties were designated as falling inside or outside the neighborhood based on this boundary.

For this analysis, we use the following variables from these datasets: recorded property condition prior to acquisition, method of property acquisition (sale/eminent domain), payment received by owners, parcel area listed on the redevelopment map, recorded room count of each property, resident tenure status

(own/rent), location inside/outside Linnentown, and relocation address. These variables do not exist for all records, which means that some records are excluded from our analysis. Based on our preliminary analysis, of the 116 total parcels, five are listed as vacant and another four were determined to be non-residential.

Assessing property appreciation is a more challenging task. The county tax assessor's office has records dating only to 1989, more than twenty years after this urban renewal project. Records before this time are not easily available. As an alternative, the 1970 census has tract level data on property values, counting the number of houses falling within particular value ranges. To combine these datasets, we interpolate values to 2010 tract boundaries weighted by the area of intersection. We combine these datasets as described below to estimate total appreciation.

Methods

Calculating the estimated price of Linnentown parcels today using home sales data

To estimate the value of Linnentown homes based on current home sales data, we create an OLS model using the 59 recorded residential fair market sales in tract 2100 in 2019-20, the residential tract most comparable to the former Linnentown neighborhood. This model was specified as follows:

$$price_{prop} = (\beta_1 * parcare_{prop}) + (\beta_2 * sqft_{prop}) + \varepsilon$$

In this equation, the property sales price is predicted from the parcel area (parcare) and the heated square feet recorded in the home sale data (sqft). We also explored the inclusion of a squared term for parcel area in this model, but the results drastically deflated the value of large parcels, making them worth less than parcels half their size. As a result, we use the simpler version shown above, which identifies the price of the structure and land separately.

To apply this model to Linnentown properties, we use the parcel area recorded in the project map shown in Figure 3. As we lack reliable data on house size (aside from the number of rooms), we used a value of 800 square feet for all properties, a midpoint between the median size of homes in the region and the known size of one still existing home that was moved during the redevelopment. We then sum the estimated current market value of these properties to identify a total value for the neighborhood.

Calculating the fair price of Linnentown parcels

We use sales data for the parcels outside Linnentown—mostly north of Baxter Street—to fit an OLS model for the price received by the property owner. The dependent variable in this model is the listed price, received either from sale or from an eminent domain judgment. The independent variables are type of transfer (sale/eminent domain), rated condition, number of rooms, and area of the parcel, which we also tested as a squared term to account for its decreasing influence at higher values.

We extract coefficients from this fitted model and apply them to each parcel within the Linnentown neighborhood to estimate the expected payment to residents if these two neighborhoods were treated fairly. For each property, we calculate the gap between the realized payment and this estimated value and then sum this figure across all properties for an estimated total loss to neighborhood residents due to underpayment.

To contextualize this figure, we also estimate the broader gap in property values between White and Black neighborhoods in Athens at the time. We do so using listed home values by census tract from the 1970 census. We identify the median home value using the value distribution provided by these data and also identify the percentage of residents classified as White for each tract in 1970. We then compare the mean home values for predominantly White tracts near Linnentown (tract numbers 5, 7, and 10) with those in predominantly non-White tracts in the same area (numbers 2, 3, and 9).

Calculating property appreciation and gain/loss from relocation

To assess property appreciation in Athens, we combine sales records with census records on home values to create an estimated appreciation between 1970 and 2020. We use census tract boundaries from the 2010 census as our units of analysis as they were the most recent available at the time of our work. For 1970 data, we calculate the median home value of each census tract from the value distribution provided by the census.

We then interpolate these values to 2010 census tract boundaries using a weighted average of areas in the intersection of these two datasets. For example, in tract 100 from the 2010 tract boundaries, 83% of the area was part of 1970 census tract 1 and 14% was part of census tract 6. Two other tracts (2 and 3), accounted for the remaining 3%. The median value in 1970 using 2010 boundaries would thus be:

$$\begin{aligned} &1970 \text{ interpolated value}_{t100} \\ &= (0.83 * medval_{t1}) + (0.14 * medval_{t6}) + (0.02 * medval_{t2}) + (0.01 * medval_{t3}) \end{aligned}$$

In this equation we weight the 1970 median values of tracts 1, 6, 2, and 3 based on the percentage of 2010 tract 100 that includes them. This form of areal interpolation is common practice and provides a straightforward way to harmonize differing boundaries for comparison (Goodchild & Anselin, 1993).

For census data in 1990, the median value is already provided in the census data. In this case, we interpolate values to 2010 boundaries in the same manner as described above. We then calculate the change in median home value from 1970 to 1990 in each 2010 census tract using the interpolated values from these two years.

For appreciation between 1990 and 2020, we rely on sales data provided by Athens-Clarke County, which includes both sale price and heated square feet for each fair market sale of residential property in the period. We use these two variables to calculate the price per square foot in each transaction. We then geocode each of the listed sales using current parcel data and identified the 2010 census tract that contained each sale. Using these tract boundaries, we are able to calculate the mean price per square foot for each two-year period (1990-91, 1992-93, etc.). We calculate appreciation for this time period by comparing 2020 mean prices to those in 1990.

Using the census data and the 1990 estimated values, we can further estimate the appreciation rate from 1970 to 1990. For example, in census tract 401, the price per square foot in 1990 was \$36.84. Between 1970 and 1990, home values in that tract increased by 264% according to the census data. So our estimated per square foot price in 1970 would be:

$$\frac{\$36.84}{2.64} = \$13.95 \text{ per square foot}$$

While median value and price per square foot are different variables, a comparison between them using our homes sales data shows that their rates of appreciation have a correlation coefficient of 0.95, showing that they are highly comparable. Lastly, we calculate total appreciation by comparing estimated square foot prices in 1970 with those in 2020.

To answer research question 3, we use tract level rates of appreciation to calculate two figures for Linnentown homeowners who bought new properties in Athens after removal (n=11): (1) the realized amount of appreciation these owners received in their new neighborhoods with the price they received and (2) the appreciation that same price would have had if these residents had stayed in Linnentown. The difference between these two figures is what we identify as individuals' gain or loss from appreciation as a result of relocation.

For example, John Henry Dillard purchased a new home in tract 30200 where the appreciation rate was 1,275%. At that rate, the value of his home would have appreciated to \$79,711 in 2020 based on the amount he received. If he had stayed in Linnentown and his home appreciated at that higher rate of 1,827%, that same value would appreciate to \$114,181, or \$34,470 more. That difference is what we count as financial loss from missed appreciation.

Appendix B: Data on Linnentown properties
Available online at https://bit.ly/linnentown_props

Block number	Parcel number	Address	Listed owner	Other residents	Owner occupied	Sale type	Listed rooms	Parcel area	Actual sales price		Modeled fair price		Est. price based on recent sales
									Price paid	w/appreciation*	Model price	w/appreciation*	
7	3	168 Peabody St.	Robin D. Wilson	Josephine D. Wilson, Roy Walker	0	Sold	4	29,475	\$ 5,600.00	\$ 102,256.00	\$ 13,319.75	\$ 243,218.64	\$ 302,419.86
7	9	420 Finley St. & 422 Finley Street	Clara Williams	Robert Atkins, Keiphus James	0	Sold	9	9,048	\$ 5,500.00	\$ 100,430.00	\$ 16,515.08	\$ 301,565.36	\$ 196,971.33
7	10	424 Finley Street	Bessie D. Brannon and Dave Brannon	Paul Ellie & Brannons	1	Condemned/appealed	4	8,060	\$ 8,250.00	\$ 150,645.00	\$ 8,822.60	\$ 161,100.68	\$ 191,871.06
7	11	S. Finley-Block 7, Parcel 11	Ed Willie Hunter, Lillie Bell Hunter		1	Condemned	0	13,030	\$ 1,450.00	\$ 26,477.00	\$ 3,878.30	\$ 70,817.76	\$ 217,527.26
7	13	S. Finley-Block 7, Parcel 13	Ray Simmons, Susie Simmons		1	Condemned	0	8,110	\$ 650.00	\$ 11,869.00	\$ 2,845.10	\$ 51,951.53	\$ 192,129.17
9	1	185 Peabody Street	Roy Williams, Nancy Williams		1	Condemned	4	6,700	\$ 7,300.00	\$ 133,298.00	\$ 8,537.00	\$ 155,885.62	\$ 184,850.45
9	2	167 Peabody Street	Roy Crook and Essie Crook		1	Condemned	6	12,000	\$ 12,250.00	\$ 223,685.00	\$ 12,644.00	\$ 230,879.44	\$ 212,210.18
9	5	196 Lyndon Row	Ben Taylor, W. A. Mathis, and Ms. Mattie W. Whitmire		1	Condemned	6	14,850	\$ 6,500.00	\$ 118,690.00	\$ 13,242.50	\$ 241,808.05	\$ 226,922.49
9	6	194 Lyndon Row & 163 Peabody Street	Josephine D. Wilson	Mary Scherrer	0	Sold	6	20,200	\$ 7,000.00	\$ 127,820.00	\$ 14,366.00	\$ 262,323.16	\$ 254,540.33
9	7	161 Peabody Street	Octavia Daniel Portlock and Willie Ervin		1	Condemned	5	11,650	\$ 9,850.00	\$ 179,861.00	\$ 11,073.50	\$ 202,202.11	\$ 210,403.41
9	9	184 Lyndon Row	Harold Taylor, W. A. Mathis, Mrs. Hattie Whitmire		1	Condemned	6	7,980	\$ 8,590.00	\$ 156,853.40	\$ 11,799.80	\$ 215,464.35	\$ 191,458.08
9	10	178 Lyndon Row	Stella S. Jones	BC Howard & Charles Shaw	0	Condemned	5	21,400	\$ 12,000.00	\$ 219,120.00	\$ 13,121.00	\$ 239,589.46	\$ 260,734.98
9	11	147 Peabody	Nellie Johnson		1	Sold	3	6,600	\$ 2,500.00	\$ 45,650.00	\$ 7,019.00	\$ 128,166.94	\$ 184,334.23
9	12	143 Peabody	John H. Griffin		1	Sold	2	6,110	\$ 2,010.00	\$ 36,702.60	\$ 5,419.10	\$ 98,952.77	\$ 181,804.75
9	13	141 Peabody	W.C. Thornton		1	Condemned	7	7,700	\$ 4,750.00	\$ 86,735.00	\$ 13,238.00	\$ 241,725.88	\$ 190,012.66
9	14	170 Lyndon Row	Joseph and Marie Smith		1	Condemned	6	6,600	\$ 7,550.00	\$ 137,863.00	\$ 11,510.00	\$ 210,172.60	\$ 184,334.23
9	15	160 Lyndon Row	Gertrude Johnson	Anna Landrum & Gertrude Johnson	1	Condemned	1	7,830	\$ 8,850.00	\$ 161,601.00	\$ 4,283.30	\$ 78,213.06	\$ 190,683.75
9	16	142 Lyndon Row	Emma Davis	Charley Brown & Emma Davis	1	Condemned	6	9,450	\$ 5,800.00	\$ 105,908.00	\$ 12,108.50	\$ 221,101.21	\$ 199,046.54
9	18	540 S. Finley St	Lilly Bell Hunter		1	Condemned/appealed	0	9,581	\$ 7,000.00	\$ 127,820.00	\$ 3,154.01	\$ 57,592.22	\$ 199,722.79
9	19	548 S. Finley St.	Nellie Cherry, Lois Hunter, Robert Hunter, Mary Kay Jones, Nellie Cherry, Lucy Hunter Harris, Lillie Bell Hunter, Willie Robert Hunter, Debra S. Hunter, Kenneth W. Hunter		1	Condemned/appealed	4	9,558	\$ 6,500.00	\$ 118,690.00	\$ 9,137.18	\$ 166,844.91	\$ 199,604.06
9	21	580 S. Finley St.	Katherine M. Decker	Alice Morton	0	Sold	3	9,920	\$ 2,500.00	\$ 45,650.00	\$ 7,716.20	\$ 140,897.81	\$ 201,472.78
9	22	128 Lyndon Row	Corine Lanier, Luther Lanier		1	Condemned	4	2,900	\$ 2,900.00	\$ 52,954.00	\$ 7,739.00	\$ 141,314.14	\$ 165,234.04
9	23	122 Lyndon Row	John Wright, Clara Ashley Wright, Mary Lizzie Ashley, and Carrie Bell Stewart Johnson		1	Condemned	6	2,500	\$ 4,500.00	\$ 82,170.00	\$ 10,649.00	\$ 194,450.74	\$ 163,169.16
9	24	590 South Finley St.	Mollie Fleming and O. J. Tolnas (Owners); Jim Thomas and "Spouse" (Renters)		1	Condemned	3	2,900	\$ 2,500.00	\$ 45,650.00	\$ 6,242.00	\$ 113,978.92	\$ 165,234.04
10	1	620 S. Church Street	Otis Favors		1	Condemned	4	11,520	\$ 6,500.00	\$ 118,690.00	\$ 9,549.20	\$ 174,368.39	\$ 209,732.32
10	2	624 S. Church St	Mary-Alice Johnson		1	Condemned	5	9,984	\$ 3,500.00	\$ 63,910.00	\$ 10,723.64	\$ 195,813.67	\$ 201,803.16
10	3	630 S. Church St	Matilda Lyons		1	Condemned	2	13,728	\$ 2,750.00	\$ 50,215.00	\$ 7,018.88	\$ 128,164.75	\$ 221,130.49
10	6	195 Lyndon Row	Ed Bazelle	Arlene Hill	0	Sold	4	7,650	\$ 2,300.00	\$ 41,998.00	\$ 8,736.50	\$ 159,528.49	\$ 189,754.55
10	7	193 Lyndon Row	Chaney Lee Davis		1	Condemned	6	11,130	\$ 7,800.00	\$ 142,428.00	\$ 12,461.30	\$ 227,543.34	\$ 207,719.06
10	8	189 Lyndon Row	Josie Adkison		1	Condemned	5	10,560	\$ 6,580.00	\$ 120,150.80	\$ 10,844.60	\$ 198,022.40	\$ 204,776.59
10	9	187 Lyndon Row	John Henry Dillard		1	Condemned	5	9,940	\$ 6,250.00	\$ 114,125.00	\$ 10,714.40	\$ 195,644.94	\$ 201,576.02
10	10	183 Lyndon Row	Fred D. Brown		1	Condemned	7	8,700	\$ 4,750.00	\$ 86,735.00	\$ 13,448.00	\$ 245,560.48	\$ 195,174.88
10	11	181 Lyndon Row	Annie B. Thomas	Kallie Jackson	1	Condemned	4	8,590	\$ 2,600.00	\$ 47,476.00	\$ 8,933.90	\$ 163,133.01	\$ 194,607.03
10	12	171 Lyndon Row	Corry Lyons		1	Sold	5	11,400	\$ 5,200.00	\$ 94,952.00	\$ 11,021.00	\$ 201,243.46	\$ 209,112.85
10	13	161 Lyndon Row	Ida Bloodsaw, Erwin Bloodsaw, Florance Bloodsaw		1	Condemned	5	11,400	\$ 5,000.00	\$ 91,300.00	\$ 11,021.00	\$ 201,243.46	\$ 209,112.85
10	14	147 Lyndon Row	Aaron Plunk Kendrink and Louise Johnson Kendrick		1	Condemned	5	13,630	\$ 6,250.00	\$ 114,125.00	\$ 11,489.30	\$ 209,794.62	\$ 220,624.59
10	15	141 Lyndon Row	James E. Brown	Hattie M. Pittard & James Brown	1	Condemned	1	12,455	\$ 2,600.00	\$ 47,476.00	\$ 5,254.55	\$ 95,948.08	\$ 214,558.99
10	16	131 Lyndon Row	Gertude Watson Clarke		1	Condemned	6	11,340	\$ 7,500.00	\$ 136,950.00	\$ 12,505.40	\$ 228,348.60	\$ 208,803.12
10	22	123 Lyndon Row	Davis Johnson		1	Condemned	5	8,745	\$ 2,950.00	\$ 53,867.00	\$ 10,463.45	\$ 191,062.60	\$ 195,407.18
								Total	\$ 214,830	\$ 3,922,796	\$ 382,565	\$ 6,985,638	\$ 7,950,585
								Median	\$ 5,600	\$ 102,256	\$ 10,714	\$ 195,645	\$ 199,723

*Appreciation based on the rate in tract 2100 (1,826%)